

HOOD CANAL – SKOKOMISH CHINOOK

In 1992 this stock was a part of the Hood Canal summer/fall chinook stock and did not receive a separate status rating.

STOCK STATUS

1992 STATUS

Not rated

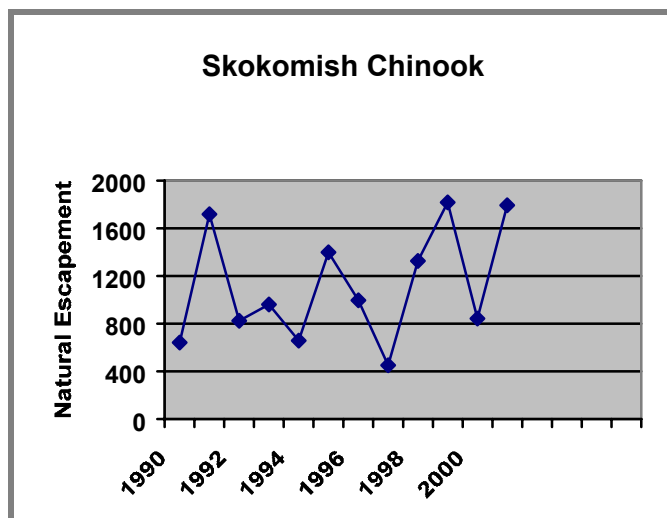
2002 STATUS

Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	NATURAL ESCAPEMENT	HATCHERY ESCAPEMENT	TOTAL ESCAPEMENT
1990	642	2,186	2,828
1991	1,719	3,068	4,787
1992	825	294	1,119
1993	960	612	1,572
1994	657	495	1,152
1995	1,398	5,196	6,594
1996	995	3,100	4,095
1997	452	1,885	2,337
1998	1,177	5,584	6,761
1999	1,692	8,227	9,919
2000	962	4,313	4,959
2001	1,913	8,816	10,729



Estimates of naturally spawning chinook are based on counts of live spawners and/or redds in the mainstem Skokomish from RM 2.2 to 12.7, in Purdy Creek from RM 0.0 to the George Adams hatchery rack, and in the South Fork Skokomish RM 0.0 to 5.5. Hatchery escapements are based on counts at the George Adams Hatchery rack on Purdy Creek, a lower Skokomish River tributary. The total escapement values for this stock are the sums of the natural and hatchery escapements.

The escapement goal for the stock is 3,150 adult spawners (1,650 natural spawners and 1,500 at the George Adams Hatchery). The total goal for the stock has generally been met primarily because hatchery escapements have exceeded the hatchery goal in most years. However, the goal for natural spawners has been met only three times since 1990. The stock is rated **Depressed** in 2002 because of **chronically low** natural escapements.

STOCK DEFINITION

Skokomish chinook were identified as a stock in 2002 based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning takes place in the mainstem Skokomish, in the lower portions of the North and South forks of the Skokomish, and in Purdy, Vance and Hunter creeks. Hatchery spawning takes place at George Adams Hatchery.

HOOD CANAL – SKOKOMISH CHINOOK

SPAWNING TIMING: Spawning generally occurs from mid-September through October with peak spawning in mid-October.

GENETIC ANALYSIS: Allozyme analysis results to date suggest that there is no significant genetic differentiation between Skokomish natural chinook spawners and George Adams Hatchery/Hoodsport Hatchery chinook. Extensive transfers of South Sound hatchery chinook to George Adams and Hood Canal hatcheries have taken place. However there appears to be some differentiation between Hood Canal-area chinook and South Sound chinook, indicating that some level of differentiation may be occurring in Hood Canal stocks following the cessation of transfers from South Sound hatcheries. Although allozyme allele frequency divergence is not evidence of local adaptation, it often signifies reproduction isolation. Local adaptations are more likely to be maintained in populations that are reproductively isolated (Marshall 2000).

STOCK ORIGIN

The Skokomish chinook stock is a **mixed** stock with **composite** production. Chinook returning to the George Adams Hatchery or Endicott Ponds on the lower Skokomish River stray in substantial numbers onto Skokomish system natural spawning areas.

HOOD CANAL – HAMMA HAMMA CHINOOK

In 1992 Hamma Hamma chinook were considered part of the Hood Canal summer/fall chinook stock and were not rated as a separate stock.

The Puget Sound Technical Recovery Team (TRT), convened by NOAA Fisheries to develop recovery criteria for listed Puget Sound chinook, presently recognizes an independent population of chinook in the Skokomish River and perhaps, for mid-Hood Canal, in the Dosewallips River. There is inadequate information at present to determine whether chinook in the Hamma Hamma and Duckabush rivers are distinct stocks within the mid-Hood Canal group (Puget Sound TRT 2002).

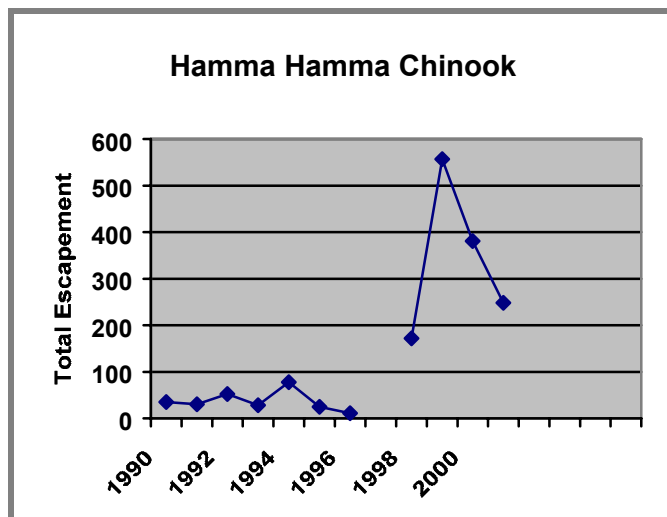
STOCK STATUS

1992 STATUS	2002 STATUS
Not rated	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	TOTAL ESCAPEMENT
1990	35
1991	30
1992	52
1993	28
1994	78
1995	25
1996	11
1997	No Data
1998	172
1999	557
2000	381
2001	248



Data are index escapement estimates based on redd counts and/or live spawner counts from RM 0.3 to 1.8 in the Hamma Hamma River and in lower John Creek, a tributary.

Stock status is rated **Depressed** in 2002.

The critical abundance threshold is 400 chinook for the Mid-Hood Canal chinook management unit, which is composed of the Hamma Hamma, Duckabush, and Dosewallips chinook stocks (PSIT and WDFW 2001). When the critical abundance threshold of the management unit is apportioned based on the spawner abundance goals of each component stock, the critical abundance thresholds are 77, 95, and 228 chinook for the Hamma Hamma, Duckabush, and Dosewallips chinook stocks, respectively.

HOOD CANAL – HAMMA HAMMA CHINOOK

Mean escapement is 146 chinook in the Hamma Hamma River from 1990 through 2001. This is higher than the critical abundance threshold of 77 chinook for the stock, but lower than the spawner objective (at low marine survival) of 255 chinook. Stock status is based on spawner abundance only. The productivity of naturally spawning chinook is unknown.

A hatchery supplementation program was begun in 1995, in cooperation with the Hood Canal Salmon Enhancement Group and Long Live the Kings, with the goal of restoring a naturally sustainable chinook population in the Hamma Hamma. Chinook released as fry from the program began to return as adults and contribute to escapement in 1998.

STOCK DEFINITION

Hamma Hamma chinook were identified as a stock in 2002 based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Chinook spawn in the lower two miles of the Hamma Hamma River and occasionally in the lower reaches of John Creek, a tributary.

SPAWNING TIMING: Spawning generally occurs in September and October.

GENETIC ANALYSIS: Genetic sampling is underway. Results to date suggest that there is little genetic differentiation between Hamma Hamma natural spawners and those in neighboring Hood Canal systems (Marshall 2000).

STOCK ORIGIN

This is likely a **mixed** stock with **composite** production. We assume that many of the naturally spawning chinook were strays from local hatcheries and/or were adults returning from hatchery fry released into the Hamma Hamma. From 1995 through 2000, a hatchery supplementation program used broodstock from George Adams Hatchery (Skokomish River system) to produce chinook fry for release into the Hamma Hamma. Beginning in 2000, chinook that returned to the Hamma Hamma were included in the program as broodstock.

HOOD CANAL – DUCKABUSH CHINOOK

In 1992 Duckabush chinook were considered part of the Hood Canal summer/fall chinook stock and were not rated as a separate stock.

The Puget Sound Technical Recovery Team (TRT), convened by NOAA Fisheries to develop recovery criteria for listed Puget Sound chinook, presently recognizes an independent population of chinook in the Skokomish River and perhaps, for mid-Hood Canal, in the Dosewallips River. There is inadequate information at present to determine whether chinook in the Hamma Hamma and Duckabush rivers are distinct stocks within the mid-Hood Canal group (Puget Sound TRT 2002).

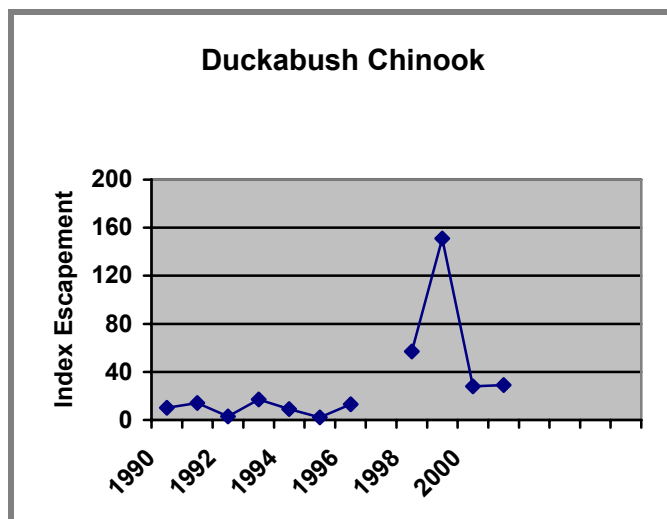
STOCK STATUS

1992 STATUS	2002 STATUS
Not rated	Critical

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	INDEX ESCAPEMENT
1990	10
1991	14
1992	3
1993	17
1994	9
1995	2
1996	13
1997	No Data
1998	57
1999	151
2000	28
2001	29



Data are index escapement estimates based on redd counts and/or live spawner counts from RM 0.0 to 2.3. Upper reaches have been surveyed in the Duckabush River since 1998, but few chinook adults or redds have been observed.

Stock status is rated **Critical** in 2002.

The critical abundance threshold is 400 chinook for the Mid-Hood Canal chinook management unit, which is composed of the Hamma Hamma, Duckabush, and Dosewallips chinook stocks (PSIT and WDFW 2001). When the critical abundance threshold of the management unit is apportioned based on the spawner abundance goals of each component stock, the critical abundance thresholds are 77, 95, and 228 chinook for the Hamma Hamma, Duckabush, and Dosewallips chinook stocks, respectively.

HOOD CANAL – DUCKABUSH CHINOOK

Mean escapement is 28 chinook in the Duckabush River from 1990 through 2001, which is lower than the critical abundance threshold of 95 chinook for the stock. Stock status is based on spawner abundance only. The productivity of naturally spawning chinook is unknown.

STOCK DEFINITION

Duckabush chinook were identified as a stock in 2002 based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Chinook currently spawn in the lower two to three miles of the Duckabush River. Potential spawning habitat is present upstream of RM 4, but few chinook adults or redds have been observed.

SPAWNING TIMING: Spawning generally occurs in September and October.

GENETIC ANALYSIS: Genetic sampling is underway.

STOCK ORIGIN

This is likely a **mixed** stock with **composite** production. We assume that many of the naturally spawning chinook are strays from local hatcheries and/or are adults returning from hatchery fry released in the stream. From 1995 through 1998, a hatchery supplementation program (which was a cooperative effort with the Hood Canal Salmon Enhancement Group and Long Live the Kings) used broodstock from George Adams Hatchery (Skokomish River system) to produce fry for release into the Duckabush River.

HOOD CANAL – DOSEWALLIPS CHINOOK

In 1992 Dosewallips chinook were considered part of the Hood Canal summer/fall chinook stock and were not rated as a separate stock.

The Puget Sound Technical Recovery Team (TRT), convened by NOAA Fisheries to develop recovery criteria for listed Puget Sound chinook, presently recognizes an independent population of chinook in the Skokomish River and perhaps, for mid-Hood Canal, in the Dosewallips River. There is inadequate information at present to determine whether chinook in the Hamma Hamma and Duckabush rivers are distinct stocks within the mid-Hood Canal group (Puget Sound TRT 2002).

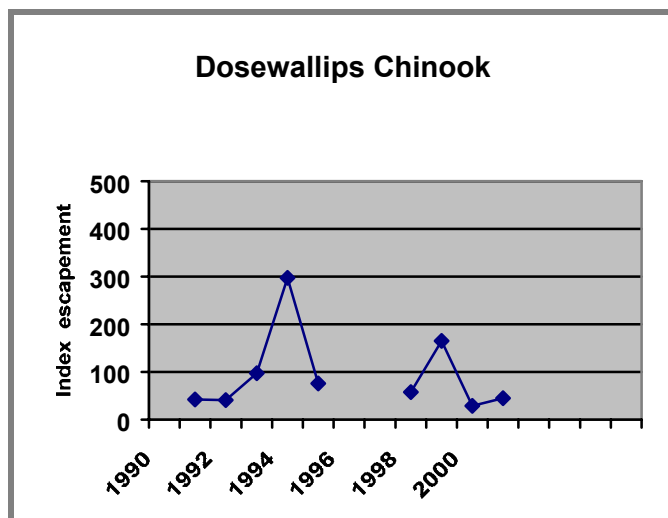
STOCK STATUS

1992 STATUS	2002 STATUS
Not rated	Critical

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	INDEX ESCAPEMENT
1990	No Data
1991	42
1992	41
1993	97
1994	297
1995	76
1996	No Data
1997	No Data
1998	58
1999	165
2000	29
2001	45



The data are index escapement estimates based on redd counts and/or live spawner counts from RM 0 to 2.3 or RM 0 to 6.7 on the mainstem Dosewallips River. Upper reaches have also been surveyed in the Dosewallips River since 1998, but few chinook adults or redds have been observed.

Stock status is rated **Critical** in 2002.

The critical abundance threshold is 400 chinook for the Mid-Hood Canal chinook management unit, which is composed of the Hamma Hamma, Duckabush, and Dosewallips chinook stocks (PSIT and WDFW 2001). When the critical abundance threshold of the management unit is apportioned based on the spawner abundance goals of each component stock, the critical abundance thresholds are 77, 95, and 228 chinook for the Hamma Hamma, Duckabush, and Dosewallips chinook stocks, respectively.

HOOD CANAL – DOSEWALLIPS CHINOOK

Mean escapement is 82 chinook in the Dosewallips River from 1990 through 2001, which is lower than the critical abundance threshold of 228 chinook for the stock. Stock status is based on spawner abundance only. The productivity of naturally spawning chinook is unknown

STOCK DEFINITION

Dosewallips chinook were identified as a stock in 2002 based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower twelve miles of the Dosewallips River.

SPAWNING TIMING: Spawning generally occurs in October.

GENETIC ANALYSIS: Genetic sampling is underway.

STOCK ORIGIN

This is likely **mixed** stock with **composite** production. We assume that many of the naturally spawning chinook are strays from local hatcheries and/or are results of hatchery fry released into the stream.

HOOD CANAL – BIG BEEF CREEK SUMMER CHUM

In 1992 this stock was a component of the Hood Canal summer chum stock and did not receive a separate status rating.

STOCK STATUS

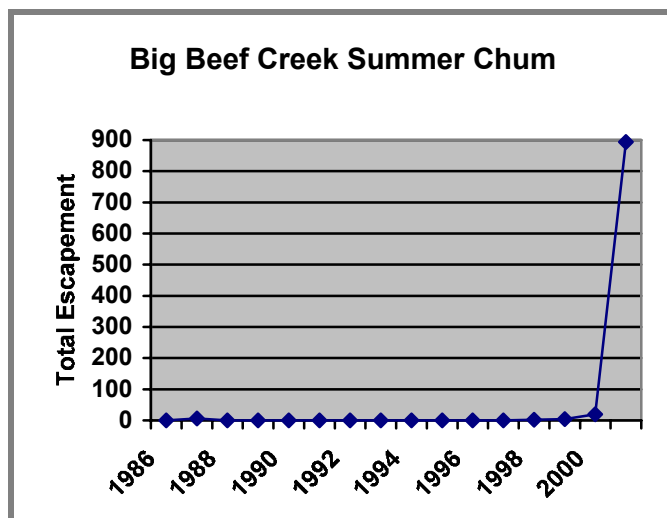
1992 STATUS	2002 STATUS
Not rated	Extinct

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Excellent

YEAR	TOTAL ESCAPEMENT
1986	0
1987	6
1988	0
1989	0
1990	0
1991	0
1992	0
1993	0
1994	0
1995	0
1996	0
1997	0
1998	2
1999	4
2000	20
2001	894

Pre-1986 data are available. Call 360-902-2856



Data are total escapement estimates based on rack counts at the mouth of Big Beef Creek and live spawner counts from RM 0.0 to 1.7.

The native stock declined precipitously in the 1980s, and no summer chum returned to the creek from 1988 through 1997. A program was begun in 1996 to reintroduce summer chum to Big Beef Creek using broodstock from the Big/Little Quilcene summer chum stock (WDFW and PNPTT 2000). The present population is considered a range extension of the Big/Little Quilcene stock. Summer chum are beginning to return to Big Beef Creek, and these fish were used as broodstock for the program beginning in 2000. Nonetheless the Big Beef Creek stock continues to be rated **Extinct** because we do not yet know whether a naturally producing population is established in the creek.

HOOD CANAL – BIG BEEF CREEK SUMMER CHUM

STOCK DEFINITION

Big Beef Creek summer chum were recognized as a separate stock in a state-tribal summer chum recovery plan (WDFW and PNPTT 2000) based on the distinct spawning distribution and early spawning timing of the native stock.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower two miles of Big Beef Creek.

SPAWNING TIMING: Spawning generally occurs from mid-September through mid-October.

GENETIC ANALYSIS: No genetic sampling was conducted prior to the loss of the native stock. Genetic samples were collected during 2000 and 2001.

STOCK ORIGIN

The original stock was **native** with **wild** production. The introduced stock is **non-native** with **cultured** production since it originated from the Big/Little Quilcene stock and it has been supported by hatchery production at both the U.S. Fish and Wildlife Service's Quilcene National Fish Hatchery and the University of Washington Big Beef Creek Hatchery beginning in 1996.

HOOD CANAL – ANDERSON CREEK SUMMER CHUM

In 1992 this stock was a component of the Hood Canal summer chum stock and did not receive a separate status rating.

STOCK STATUS

1992 STATUS	2002 STATUS
Not rated	Extinct

STOCK STATUS RATING DATA

No summer chum have been counted in Anderson Creek since 1984, so the stock is rated **Extinct**. Natural re-colonization may occur as Hood Canal summer chum stocks rebuild.

STOCK DEFINITION

Anderson Creek summer chum were recognized as a stock in the state-tribal summer chum recovery plan (WDFW and PNPTT 2000) based on their distinct spawning distribution and early spawning timing.

SPAWNING DISTRIBUTION: Most spawning took place in the lower mile of Anderson Creek.

SPAWNING TIMING: Spawning occurred mainly from mid-September through mid-October.

GENETIC ANALYSIS: No genetic sampling was conducted prior to the loss of the native stock.

STOCK ORIGIN

The stock was **native** with **wild** production.

HOOD CANAL – DEWATTO SUMMER CHUM

In 1992 this stock was a component of the Hood Canal summer chum stock and did not receive a separate status rating.

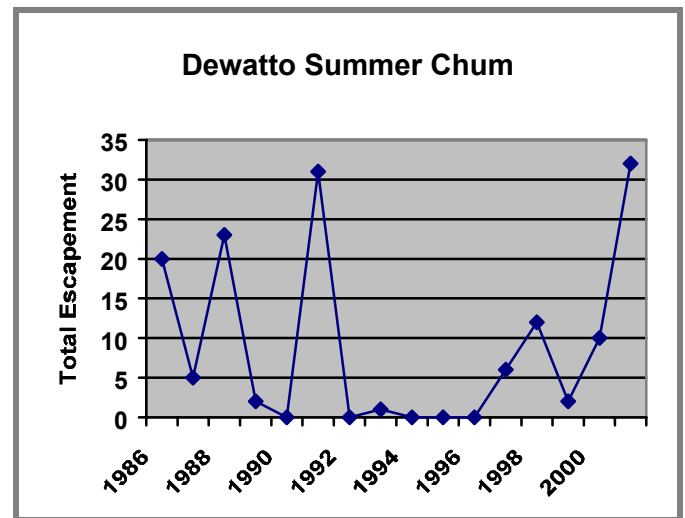
STOCK STATUS

1992 STATUS	2002 STATUS
Not rated	Extinct

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	TOTAL ESCAPEMENT
1986	20
1987	5
1988	23
1989	2
1990	0
1991	31
1992	0
1993	1
1994	0
1995	0
1996	0
1997	6
1998	12
1999	2
2000	10
2001	32



Data are total escapements based on live spawner counts from RM 0.3 to 1.8. The stock declined precipitously in the 1980s. Between 1992 and 1996 only one summer chum was observed. Natural re-colonization is apparently occurring in the Dewatto. The stock is rated as **Extinct** in 2002 since it is not apparent that a naturally- producing population is established in the stream.

STOCK DEFINITION

Dewatto summer chum were recognized as a stock in the state-tribal summer chum recovery plan (WDFW and PNPTT 2000) based on their distinct spawning distribution and early spawning timing.

SPAWNING DISTRIBUTION: Most spawning occurs in the lower two miles of the Dewatto River.

SPAWNING TIMING: Spawning generally occurs from mid-September through mid-October.

HOOD CANAL – DEWATTO SUMMER CHUM

GENETIC ANALYSIS: No genetic sampling was conducted prior to the loss of the native stock.

STOCK ORIGIN

This was a **native** stock with **wild** production.

HOOD CANAL – TAHUYA SUMMER CHUM

In 1992 this stock was a component of the Hood Canal summer chum stock and did not receive a separate status rating.

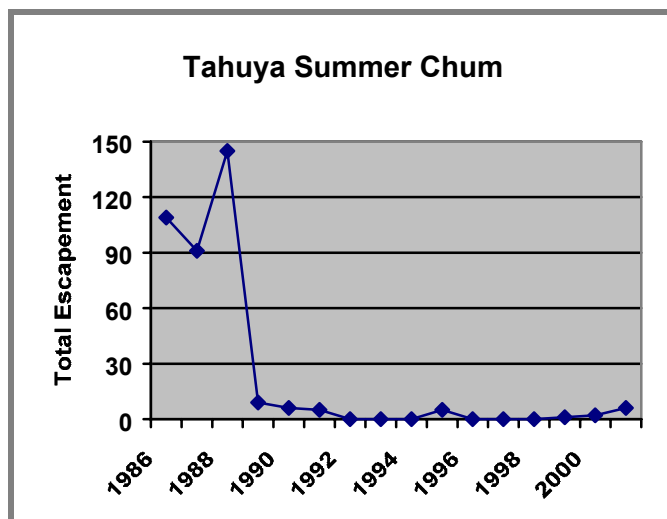
STOCK STATUS

1992 STATUS	2002 STATUS
Not rated	Extinct

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	TOTAL ESCAPEMENT
1986	109
1987	91
1988	145
1989	9
1990	6
1991	5
1992	0
1993	0
1994	0
1995	0
1996	5
1997	0
1998	0
1999	1
2000	2
2001	6



Data are total escapement estimates based on live spawner counts from RM 0.0 to 2.6. The stock declined precipitously in the 1980s. Between 1992 and 1998 only five summer chum were observed. One summer chum was seen in 1999, two in 2000 and six in 2001. The stock is rated **Extinct** in 2002. A program is being planned to reintroduce summer chum into the Tahuya River using the Union River stock.

STOCK DEFINITION

Tahuya summer chum were recognized as a stock in the state-tribal summer chum recovery plan (WDFW and PNPTT 2000) based on their distinct spawning distribution and early spawning timing.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower three miles of the Tahuya River.

SPAWNING TIMING: Spawning generally occurs from mid-September through mid-October.

HOOD CANAL – TAHUYA SUMMER CHUM

GENETIC ANALYSIS: No genetic sampling was conducted prior to the loss of the native stock.

STOCK ORIGIN

This was a **native** stock with **wild** production.

HOOD CANAL – UNION SUMMER CHUM

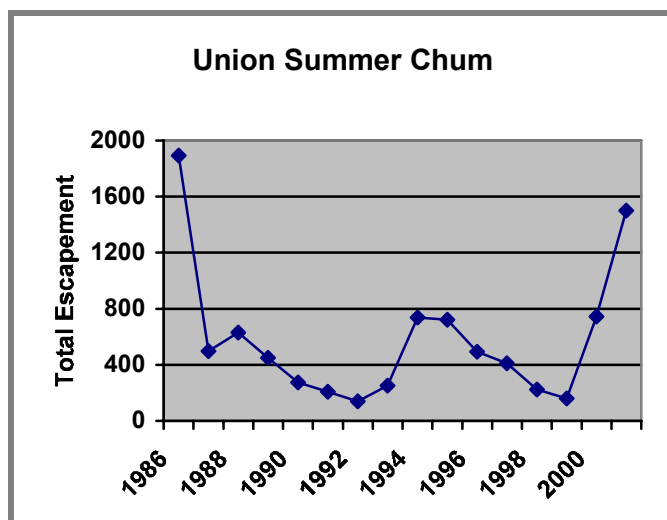
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	1,892
1987	497
1988	629
1989	450
1990	275
1991	208
1992	140
1993	251
1994	738
1995	721
1996	494
1997	410
1998	223
1999	159
2000	744
2001	1,500



Data are total escapement estimates based on rack counts and live spawner counts from RM 0.3 to 2.1. The stock has continued to experience good escapement levels and is rated **Healthy** in 2002. In 2000, a hatchery supplementation program was begun in cooperation with the Hood Canal Salmon Enhancement Group. The strategy is to increase the abundance of Union River summer chum to allow for transfers of fish for use in a program to reintroduce summer chum to the Tahuya River using Union River stock.

STOCK DEFINITION

Union summer chum were identified as a stock based on their distinct spawner distribution and early spawning timing (WDFW and PNPTT 2000).

SPAWNING DISTRIBUTION: Most spawning takes place in the lower three miles of the Union River.

SPAWNING TIMING: Spawning generally occurs in September to early October, approximately seven to ten days earlier than in other Hood Canal summer chum stocks.

GENETIC ANALYSIS: Allozyme analysis has shown that Union summer chum are genetically distinct from all other Washington chum stocks examined except Duckabush summer chum (Phelps et al. 1995). Separate

HOOD CANAL – UNION SUMMER CHUM

stock status is based on the geographic distance between the stocks and the likely degree of reproductive isolation.

STOCK ORIGIN

This is a **native** stock with **composite** production. In 2000, a cooperative hatchery supplementation program was begun using wild Union River summer chum as broodstock. Adult summer chum produced in the program are expected to return beginning in 2003 and contribute to the production of this stock

HOOD CANAL – SKOKOMISH SUMMER CHUM

In 1992 this stock was a component of the Hood Canal summer chum stock and was not rated separately.

STOCK STATUS

1992 STATUS	2002 STATUS
Not rated	Extinct

STOCK STATUS RATING DATA

Summer chum were once abundant in the Skokomish River system but declined steadily through the last three decades. Spawning ground surveys report an occasional summer-timed chum salmon but the numbers are not sufficient to represent a self-sustaining stock, so the stock is rated **Extinct** in 2002.

STOCK DEFINITION

Skokomish summer chum were recognized as a stock in the state-tribal summer chum recovery plan (WDFW and PNPTT 2000) based on their distinct spawning distribution and early spawning timing.

SPAWNING DISTRIBUTION: Spawning occurred in the lower Skokomish mainstem and North Fork Skokomish River

SPAWNING TIMING: Spawning occurred mainly from mid-September through mid-October.

GENETIC ANALYSIS: No genetic sampling was conducted prior to the loss of the native stock.

STOCK ORIGIN

This was a **native** stock with **wild** production.

HOOD CANAL – FINCH CREEK SUMMER CHUM

In 1992 this stock was a component of the Hood Canal summer chum stock and did not receive a separate status rating.

STOCK STATUS

1992 STATUS	2002 STATUS
Not rated	Extinct

STOCK STATUS RATING DATA

Summer chum were present in Finch Creek when the WDFW Hoodsport Hatchery began operations there in 1953. The numbers of summer chum counted at the hatchery rack declined through time and the last summer-timed chum were observed in 1976. The stock is rated **Extinct**.

STOCK DEFINITION

Finch Creek summer chum were recognized as a stock in the state-tribal summer chum recovery plan (WDFW and PNPTT 2000) based on their distinct spawning distribution and early spawning timing.

SPAWNING DISTRIBUTION: Prior to hatchery construction, spawning took place in lower Finch Creek.

SPAWNING TIMING: Spawning occurred mainly from mid-September through mid-October.

GENETIC ANALYSIS: No genetic sampling was conducted prior to the loss of the native stock.

STOCK ORIGIN

This was a **native** stock with **wild** production.

HOOD CANAL – LILLIWAUP SUMMER CHUM

In 1992 this stock was a component of the Hood Canal summer chum stock and did not receive a separate status rating.

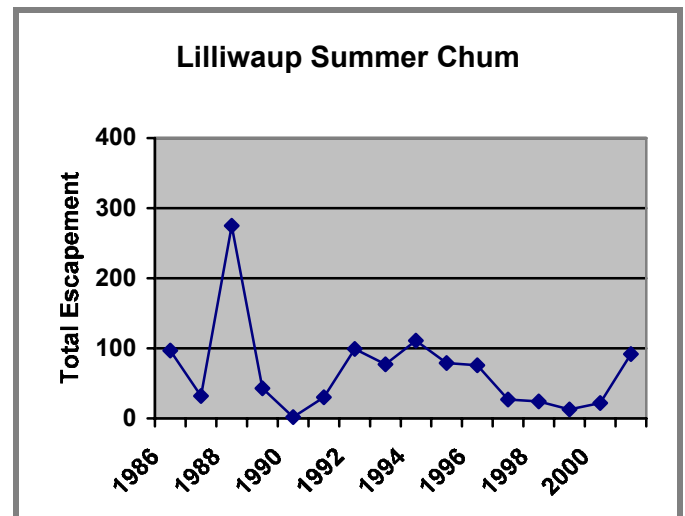
STOCK STATUS

1992 STATUS	2002 STATUS
Not rated	Critical

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	TOTAL ESCAPEMENT
1986	97
1987	32
1988	275
1989	43
1990	2
1991	30
1992	99
1993	77
1994	111
1995	79
1996	76
1997	28
1998	24
1999	13
2000	22
2001	92



Data are total escapement estimates based on live spawner counts from RM 0.0 to 0.7 or counts of adult summer chum at a temporary trap.

Lilliwaup summer chum declined along with other Hood Canal summer chum stocks in the 1980s and have remained at a very low level. The stock is rated **Critical** in 2002 because of **chronically low** escapements.

STOCK DEFINITION

Lilliwaup summer chum were recognized as a stock in the state-tribal summer chum recovery plan (WDFW and PNPTT 2000) based on their distinct spawning distribution and early spawning timing. Stock identification is supported by genetic analysis.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower mile of the stream.

HOOD CANAL – LILLIWAUP SUMMER CHUM

SPAWNING TIMING: Spawning generally occurs from mid-September through mid-October.

GENETIC ANALYSIS: Allozyme analysis has shown that Lilliwaup summer chum are genetically distinct from all other Washington chum stocks examined (Phelps et al. 1995).

STOCK ORIGIN

This is a **native** stock with **composite** production. In 1992, a hatchery supplementation program using Lilliwaup summer chum as broodstock was begun, in cooperation with Long Live the Kings, to increase the number of naturally produced fish (WDFW and PNPTT 2000). Summer chum adults produced in the program would have returned beginning in 1995 and have likely contributed to the production of this stock.

HOOD CANAL – HAMMA HAMMA SUMMER CHUM

In 1992 this stock was a component of the Hood Canal summer chum stock and did not receive a separate status rating.

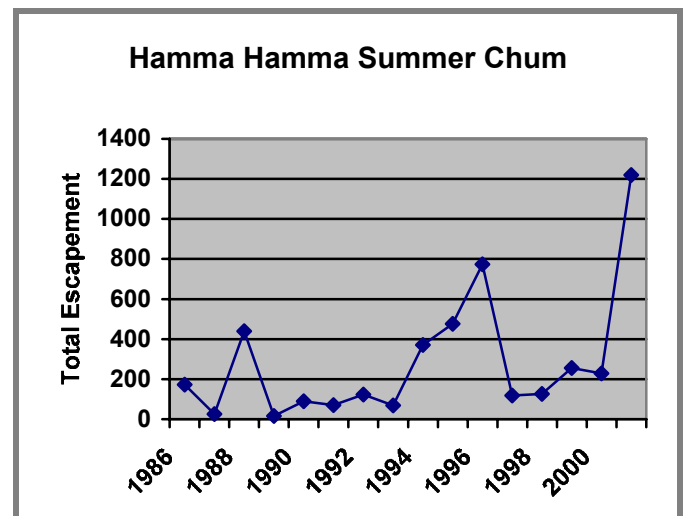
STOCK STATUS

1992 STATUS	2002 STATUS
Not rated	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	173
1987	26
1988	440
1989	16
1990	90
1991	71
1992	123
1993	69
1994	370
1995	476
1996	774
1997	118
1998	127
1999	255
2000	229
2001	1,220



Data are total escapement estimates based on live spawner counts from RM 0.3 to 1.8 in the Hamma Hamma River and in John Creek, a tributary. Hamma Hamma summer chum declined along with other Hood Canal summer chum stocks in the 1980s and have shown only slight improvement in recent years. Status is rated **Depressed** in 2002 because of continued **chronically low** escapements.

STOCK DEFINITION

Hamma Hamma summer chum were recognized as a stock in the state-tribal summer chum recovery plan (WDFW and PNPTT 2000) based on their distinct spawning distribution and early spawning timing.

SPAWNING DISTRIBUTION: Spawning takes place in the lower two miles of the mainstem Hamma Hamma and in John Creek.

HOOD CANAL – HAMMA HAMMA SUMMER CHUM

SPAWNING TIMING: Spawning occurs from mid-September through mid-October.

GENETIC ANALYSIS: Allozyme analysis has shown that Hamma Hamma summer chum are genetically distinct from all other Washington chum stocks except Duckabush summer chum and Union summer chum (Phelps et al. 1995). Separate stock status is based on the geographic distances among these populations and the likely degree of reproductive isolation.

STOCK ORIGIN

This is a **native** stock with **composite** production. A hatchery supplementation program using Hamma Hamma summer chum as broodstock was begun in 1997, in cooperation with the Hood Canal Salmon Enhancement Group and Long Live the Kings, to increase the number of naturally produced fish (WDFW and PNPTT 2000). Adults produced in the program began to return in 2000 and to contribute to the production of this stock.

HOOD CANAL – DUCKABUSH SUMMER CHUM

In 1992 this stock was a component of the Hood Canal summer chum stock and did not receive a separate status rating.

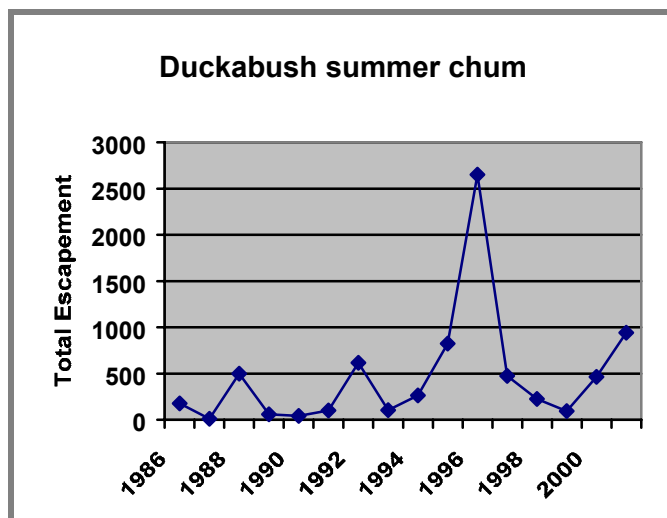
STOCK STATUS

1992 STATUS	2002 STATUS
Not rated	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	TOTAL ESCAPEMENT
1986	177
1987	12
1988	497
1989	60
1990	42
1991	102
1992	617
1993	105
1994	263
1995	825
1996	2,650
1997	475
1998	226
1999	92
2000	464
2001	942



Data are total escapement estimates based on live spawner counts from RM 0.0 to 2.3. Duckabush summer chum declined in the 1980s along with other Hood Canal summer chum stocks. They have shown modest improvement in recent years. The stock is rated **Depressed** in 2002 because of its continuing pattern of **chronically low** escapements.

STOCK DEFINITION

Duckabush summer chum were recognized as a stock in the state-tribal summer chum recovery plan (WDFW and PNPTT 2000) based on their distinct spawning distribution and early spawning timing.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower 2.3 miles of the Duckabush River.

SPAWNING TIMING: Spawning generally occurs from mid-September through mid-October.

HOOD CANAL – DUCKABUSH SUMMER CHUM

GENETIC ANALYSIS: Allozyme analysis has shown that Duckabush summer chum are genetically distinct from all other Washington chum stocks examined except Hamma Hamma summer chum (Phelps et al. 1995). Separate stock status is based on the geographic distance between the two stocks and the likely degree of reproductive isolation.

STOCK ORIGIN

This is a **native** stock with **wild** production.

HOOD CANAL – DOSEWALLIPS SUMMER CHUM

In 1992 this stock was a component of the Hood Canal summer chum stock and did not receive a status rating.

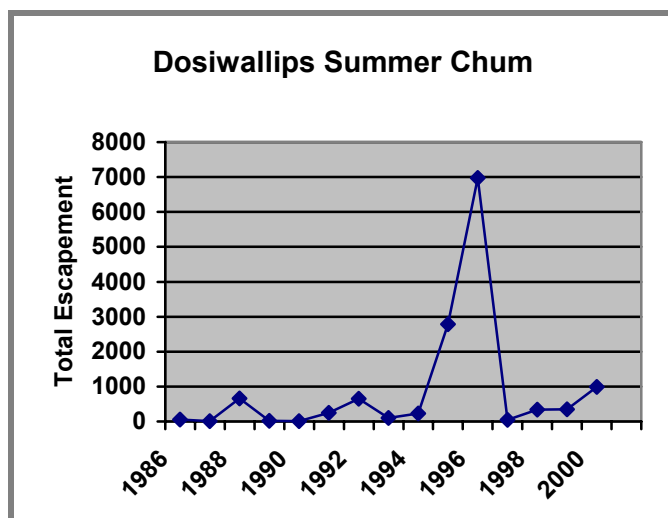
STOCK STATUS

1992 STATUS	2002 STATUS
Not rated	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	TOTAL ESCAPEMENT
1986	57
1987	9
1988	661
1989	16
1990	8
1991	250
1992	655
1993	105
1994	225
1995	2,787
1996	6,976
1997	47
1998	336
1999	351
2000	990



Data are total escapement estimates based on live spawner counts from RM 0.0 to 2.3 on the Dosewallips. Dosewallips summer chum declined along with other Hood Canal summer chum stocks in the 1980s but have demonstrated improvement in recent years. The stock is rated **Depressed** in 2002 because of its continuing **chronically low** escapements.

STOCK DEFINITION

Dosewallips summer chum were recognized as a stock in the state-tribal summer chum recovery plan (WDFW and PNPTT 2000) based on their distinct spawning distribution and early spawning timing.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower 2.3 miles of the Dosewallips River.

SPAWNING TIMING: Spawning generally occurs from mid-September through mid-October.

HOOD CANAL – DOSEWALLIPS SUMMER CHUM

GENETIC ANALYSIS: Allozyme analysis has shown that Dosewallips summer chum are genetically distinct from all other Washington chum stocks examined (Phelps et al. 1995).

STOCK ORIGIN

This is a **native** stock with **wild** production.

HOOD CANAL – BIG/LITTLE QUILCENE SUMMER CHUM

In 1992 this stock was a component of the Hood Canal summer chum stock and did not receive a separate status rating.

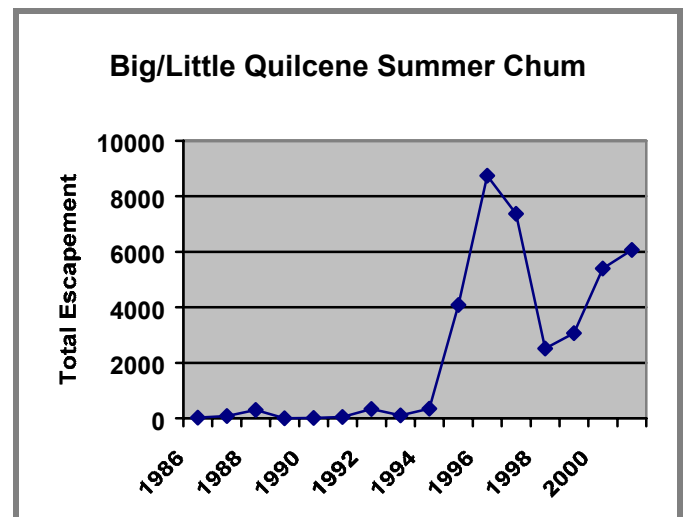
STOCK STATUS

1992 STATUS	2002 STATUS
Not rated	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	TOTAL ESCAPEMENT
1986	27
1987	79
1988	297
1989	2
1990	6
1991	50
1992	743
1993	148
1994	722
1995	4,574
1996	9,515
1997	7,903
1998	3,057
1999	3,237
2000	5,898
2001	6,373



Data are total escapement estimates based on Quilcene National Fish Hatchery rack counts, live spawner counts from RM 0.0 to 2.8 on the Big Quilcene River, and on Little Quilcene River live spawner counts from RM 0.0 to 1.8.

Large escapements of Big/Little Quilcene summer chum have occurred since 1995, however, these returns have been a direct result of a hatchery supplementation program designed to rebuild this stock. Because the recent high values are primarily the result of supplementation releases rather than natural production, because escapements in the Little Quilcene are still low and because poor freshwater habitat conditions may constrain natural production in both rivers, the stock is rated **Depressed** in 2002 due to **chronically low** natural escapements (WDFW and PNPTT 2000).

HOOD CANAL – BIG/LITTLE QUILCENE SUMMER CHUM

STOCK DEFINITION

Big/Little Quilcene summer chum were recognized as a separate stock in the state-tribal summer chum recovery plan (WDFW and PNPTT 2000) based on their distinct spawning distribution and early spawning timing.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower three miles of the Big Quilcene River and in the lower two miles of the Little Quilcene River.

SPAWNING TIMING: Spawning generally occurs from mid-September through mid-October.

GENETIC ANALYSIS: Allozyme analysis has shown that Big/Little Quilcene summer chum are genetically distinct from all other Washington chum stocks examined except Hamma Hamma summer chum (Phelps et al. 1995). Separate stock status is based on the geographic distance between the stocks and the likely degree of reproductive isolation.

STOCK ORIGIN

This is a **native** stock with **composite** production. Beginning in 1992, the U.S. Fish and Wildlife Service's Quilcene National Fish Hatchery has maintained a Big/Little Quilcene summer chum supplementation program that contributes to the production of this stock.

HOOD CANAL – NORTHEAST HOOD CANAL FALL CHUM

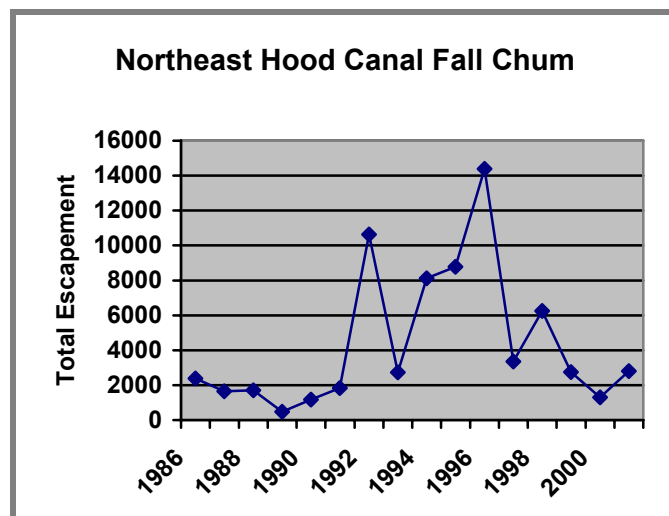
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	TOTAL ESCAPEMENT
1986	2,385
1987	1,651
1988	1,707
1989	475
1990	1,172
1991	1,841
1992	10,634
1993	2,736
1994	8,123
1995	8,786
1996	14,382
1997	3,362
1998	6,244
1999	2,758
2000	1,304
2001	2,806



Data are total escapement estimates based on live spawner counts in index areas on Anderson, Big Beef, Seabeck and Stavis creeks.

Northeast Hood Canal fall chum escapement estimates increased substantially in the early 1990s and have remained high. Stock status is rated **Healthy** in 2002.

STOCK DEFINITION

Northeast Hood Canal fall chum were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in Anderson, Big Beef, Seabeck and Stavis creeks.

SPAWNING TIMING: Spawning generally occurs from late November through December.

GENETIC ANALYSIS: Allozyme analysis of Northeast Hood Canal fall chum (Big Beef Creek) has shown them to be genetically distinct from fall chum stocks on the west side of Hood Canal but not from other eastside Hood Canal stocks (Phelps et al 1995).

HOOD CANAL – NORTHEAST HOOD CANAL FALL CHUM

STOCK ORIGIN

This is a **mixed** stock with **composite** production. Extensive releases of hatchery-origin fall chum in northeast Hood Canal streams may have affected the genetic composition of the stock.

HOOD CANAL – DEWATTO FALL CHUM

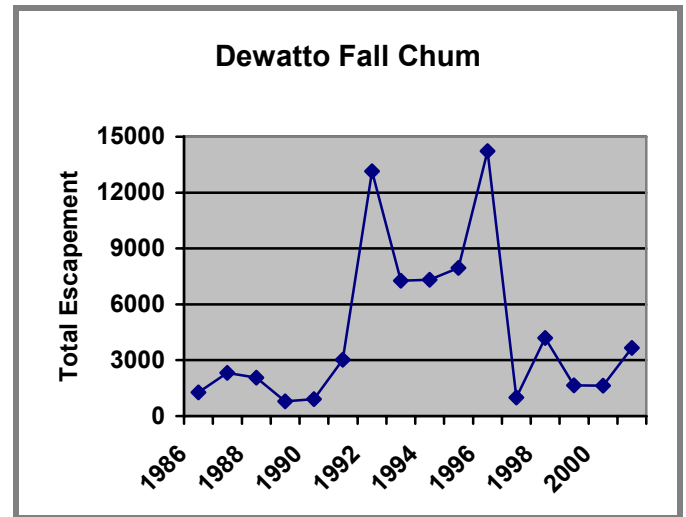
STOCK STATUS

1992 STATUS Healthy	2002 STATUS Healthy
-------------------------------	-------------------------------

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	1,273
1987	2,326
1988	2,061
1989	782
1990	911
1991	3,031
1992	13,146
1993	7,273
1994	7,321
1995	7,955
1996	14,233
1997	997
1998	4,200
1999	1,644
2000	1,913
2001	3,660



Data are total escapement estimates based on live spawner counts in index areas on the lower mainstem Dewatto and in two tributaries, Shoe and White creeks.

Escapements of Dewatto fall chum have been strong since the early 1990s. The stock is therefore rated **Healthy** in 2002.

STOCK DEFINITION

Dewatto fall chum were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower mainstem Dewatto and in Shoe and White creeks.

SPAWNING TIMING: Spawning generally occurs from late November through December.

GENETIC ANALYSIS: Allozyme analysis of Dewatto fall chum has shown that the stock contributes to the genetic heterogeneity with Hood Canal but not all pairwise comparisons with other Hood Canal fall chum stocks show significant differences (Phelps et al. 1995).

HOOD CANAL – DEWATTO FALL CHUM

STOCK ORIGIN

This is a **mixed** stock with **composite** production. Extensive releases of non-native hatchery-origin fall chum into the Dewatto River may have affected the genetic composition of the stock.

HOOD CANAL – SOUTHEAST HOOD CANAL FALL CHUM

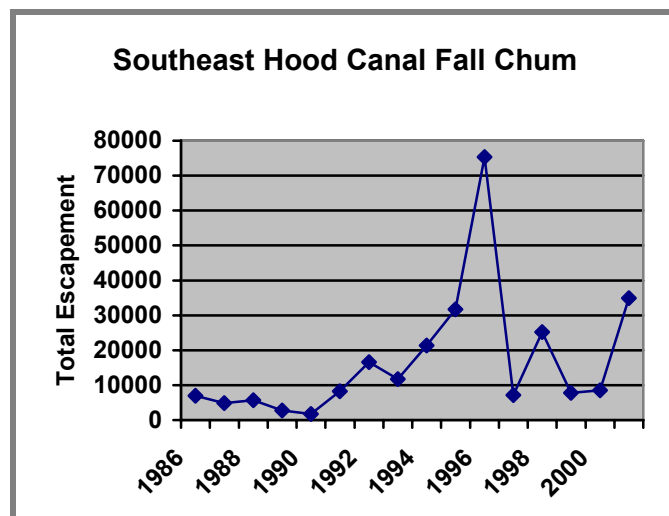
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	TOTAL ESCAPEMENT
1986	6,970
1987	4,868
1988	5,725
1989	2,724
1990	1,760
1991	8,281
1992	16,595
1993	11,722
1994	21,396
1995	31,741
1996	75,360
1997	7,175
1998	25,241
1999	7,753
2000	8,541
2001	34,917



Data are total escapement estimates based on live spawner counts in index areas in the Union and Tahuya rivers and in Stimson, Big and Little Mission, Twanoh, Alderbrook, Rendsland and Caldervin creeks.

Southeast Hood Canal fall chum escapements have been strong since the early 1990s with one extraordinary estimated escapement of 75,360 in 1996. The stock is rated **Healthy** in 2002.

STOCK DEFINITION

Southeast Hood Canal fall chum were recognized as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower two miles of the Union and Tahuya rivers and in Stimson, Big and Little Mission, Twanoh, Alderbrook, Rendsland and Caldervin creeks.

SPAWNING TIMING: Spawning generally occurs from late November through December.

GENETIC ANALYSIS: Allozyme analysis of Southeast Hood Canal fall chum (Big Mission Creek, Little Mission Creek and Tahuya River collections) has shown that Big Mission Creek fish are distinct from the other two subpopulations within the stock (Phelps et al 1995).

HOOD CANAL – SOUTHEAST HOOD CANAL FALL CHUM

STOCK ORIGIN

This is a **mixed** stock with **composite** production. Extensive releases of non-native hatchery fall chum into southeast Hood Canal streams may have affected the genetic composition of the stock.

HOOD CANAL – LOWER SKOKOMISH FALL CHUM

STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Unknown

STOCK STATUS RATING DATA

There are no abundance trend data for Lower Skokomish fall chum, so their status remains **Unknown** in 2002. Many chum salmon, probably including large numbers of strays from George Adams and McKernan hatcheries, spawn in the lower Skokomish and its tributaries. Although quantitative data are lacking, the stock is probably healthy.

STOCK DEFINITION

Lower Skokomish fall chum were identified as a stock based on their distinct spawning distribution and early spawning timing compared with the timing for Upper Skokomish late fall chum.

SPAWNING DISTRIBUTION: Most spawning takes place in Purdy and Weaver creeks and in the lower mainstem Skokomish River.

SPAWNING TIMING: Spawning generally occurs from November through December.

GENETIC ANALYSIS: No genetic analysis has been conducted on Lower Skokomish fall chum.

STOCK ORIGIN

This is a **mixed** stock with **composite** production. George Adams Hatchery (located on Purdy Creek, a lower Skokomish River tributary) and McKernan Hatchery (located on Weaver Creek, another lower Skokomish tributary) exchange fall chum eggs and receive eggs from Hoodsport Hatchery when their egg take goals are not met. Repeated releases of Hoodsport Hatchery fall chum into the lower Skokomish River may have significantly altered the genetic composition of the Lower Skokomish fall chum stock.

HOOD CANAL – UPPER SKOKOMISH LATE FALL CHUM

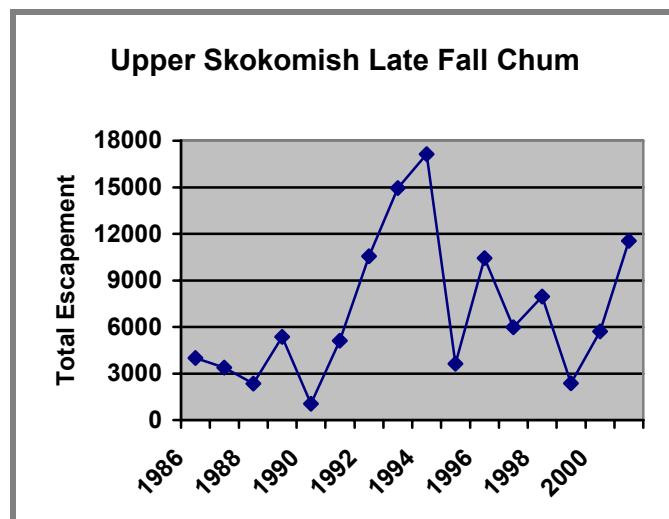
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	TOTAL ESCAPEMENT
1986	3,992
1987	3,386
1988	2,342
1989	5,366
1990	1,058
1991	5,109
1992	10,549
1993	14,940
1994	17,126
1995	3,624
1996	10,430
1997	5,974
1998	7,966
1999	2,374
2000	5,717
2001	11,542



Data are total escapement estimates based on live spawner counts in index areas on the North Fork Skokomish River, Richert Springs, Swift Creek and Vance Creek.

Upper Skokomish late fall chum have a long-term pattern of relatively stable escapements, with somewhat higher escapements in the 1990s. The stock is rated **Healthy** in 2002.

STOCK DEFINITION

Upper Skokomish late fall chum were identified as a stock based on their distinct spawning distribution, later river entry and spawning timing, and their genetic composition.

SPAWNING DISTRIBUTION: Spawning occurs in most tributaries of the Skokomish system below the Cushman Dam on the North Fork. Spawning is concentrated in the lower 4.7 miles of the North Fork Skokomish.

SPAWNING TIMING: Spawning generally occurs from December through January.

GENETIC ANALYSIS: Allozyme analysis has shown that North Fork Skokomish fall chum contribute to the genetic heterogeneity with Hood Canal, but not all pairwise comparisons with other Hood Canal fall chum stocks show significant differences (Phelps et al. 1995).

HOOD CANAL – UPPER SKOKOMISH LATE FALL CHUM

STOCK ORIGIN

This is a **native** stock with **wild** production.

HOOD CANAL – WEST HOOD CANAL FALL CHUM

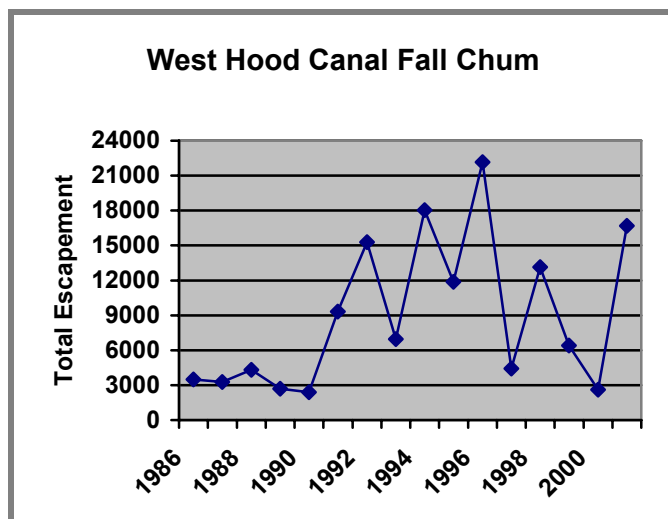
STOCK STATUS

1992 STATUS Healthy	2002 STATUS Healthy
-------------------------------	-------------------------------

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	3,480
1987	3,267
1988	4,308
1989	2,701
1990	2,380
1991	9,326
1992	15,282
1993	6,967
1994	18,034
1995	11,887
1996	22,170
1997	4,438
1998	13,131
1999	6,414
2000	2,623
2001	16,689



Data are total escapement estimates based on live spawner counts in index areas on Hill, Clark, Miller, Sund, Little Lilliwaup, Lilliwaup, Eagle and Jorsted creeks.

West Hood Canal fall chum escapements declined during the 1980s but have been strong since the early 1990s. The stock is rated **Healthy** in 2002.

STOCK DEFINITION

West Hood Canal fall chum were identified as a stock based on their distinct spawning distribution. Most spawning streams are close enough in proximity to allow gene flow among them.

SPAWNING DISTRIBUTION: Spawning takes place in numerous small, independent west Hood Canal streams including Hill, Clark, Miller, Sund, Little Lilliwaup, Eagle and Jorsted creeks.

SPAWNING TIMING: Spawning generally occurs from November through January.

GENETIC ANALYSIS: West Hood Canal fall chum are genetically indistinguishable from Hoodsport Hatchery fall chum (Phelps et al. 1995). Separate stock status is based on the geographic distances among these

HOOD CANAL – WEST HOOD CANAL FALL CHUM

streams and other chum-bearing streams in Hood Canal and the likely degree of reproductive isolation from other Hood Canal fall chum stocks.

STOCK ORIGIN

This is a **mixed** stock with **composite** production. Intense hatchery introductions and straying from the nearby Hoodsport Hatchery stock into these streams have probably either established introduced runs or impacted native chum such that they can no longer be distinguished from the hatchery stock.

HOOD CANAL – HAMMA HAMMA LATE FALL CHUM

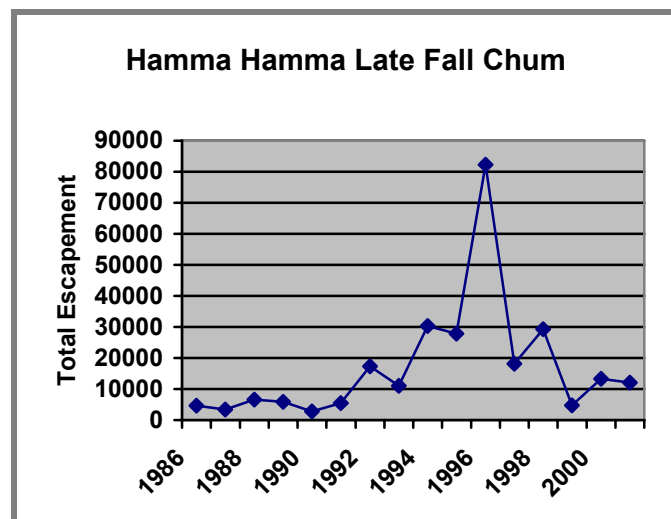
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	TOTAL ESCAPEMENT
1986	4,648
1987	3,430
1988	6,630
1989	5,924
1990	2,798
1991	5,485
1992	17,320
1993	11,027
1994	30,346
1995	27,820
1996	82,297
1997	18,114
1998	29,299
1999	4,734
2000	13,289
2001	12,088



Data are total escapement estimates based on live spawner counts in index areas on the Hamma Hamma and John Creek, a tributary.

Hamma Hamma late fall chum escapements have been strong since the early 1990s with one extraordinary escapement of 82,297 in 1996. The stock is rated **Healthy** in 2002.

STOCK DEFINITION

Hamma Hamma late fall chum were identified as a stock based on their distinct spawning distribution and somewhat late run timing and spawning timing.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower mile of the Hamma Hamma River and in John Creek.

SPAWNING TIMING: Spawning generally occurs from late November through early January. Late return and spawn timing have allowed the stock to remain viable since commercial fisheries target earlier-returning Hood Canal hatchery-origin fall chum.

HOOD CANAL – HAMMA HAMMA LATE FALL CHUM

GENETIC ANALYSIS: Allozyme analysis has shown that there is considerable genetic variation within Hood Canal fall chum stocks. Pairwise comparisons of Hamma Hamma late fall chum with other Hood Canal fall chum stocks do not always show significant differences (Phelps et al. 1995).

STOCK ORIGIN

This is a **native** stock with **wild** production.

HOOD CANAL– DUCKABUSH LATE FALL CHUM

STOCK STATUS

1992 STATUS

Healthy

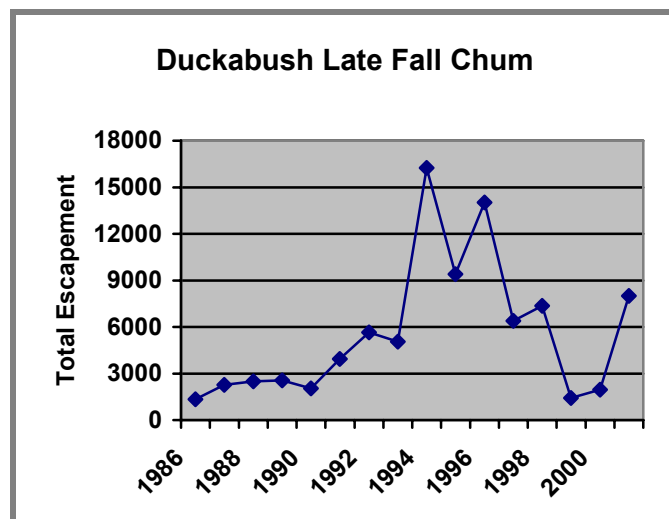
2002 STATUS

Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	TOTAL ESCAPEMENT
1986	1,348
1987	2,258
1988	2,485
1989	2,564
1990	2,039
1991	3,937
1992	5,644
1993	5,053
1994	16,251
1995	9,395
1996	14,016
1997	6,383
1998	7,365
1999	1,422
2000	1,953
2001	8,003



HOOD CANAL– DUCKABUSH LATE FALL CHUM

Data are total escapement estimates based on live spawner counts in index areas on the Duckabush River, Fulton Creek, an independent stream located south of the Duckabush, and Pierce Creek, an independent stream north of the Duckabush.

Duckabush late fall chum escapements have been strong since the early 1990s with two very large escapements in 1994 and 1996 of 15,410 and 12,239, respectively. Escapements in 1999 and 2000 are lower but are within the normal range for the stock. Stock status is rated **Healthy** in 2002.

STOCK DEFINITION

Duckabush late fall chum were identified as a stock based on their distinct spawning distribution and somewhat late return and spawning timing.

SPAWNING DISTRIBUTION: Most spawning takes place mainly in the lower mile of the Duckabush River and in Fulton and Pierce creeks

SPAWNING TIMING: Spawning generally occurs from late November through early January. Late return and spawn timing have allowed the stock to remain viable since commercial fisheries target earlier-returning Hood Canal hatchery-origin fall chum.

GENETIC ANALYSIS: No genetic analysis has been done on Duckabush late fall chum.

STOCK ORIGIN

This is a **native** stock with **wild** production.

HOOD CANAL – DOSEWALLIPS LATE FALL CHUM

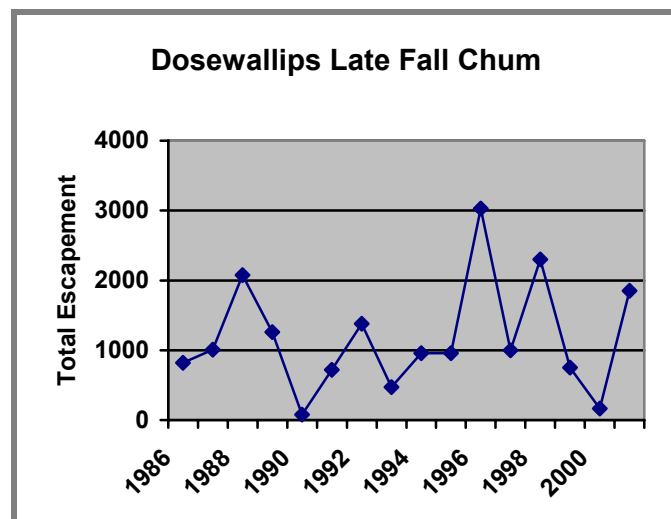
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	TOTAL ESCAPEMENT
1986	819
1987	1,006
1988	2,074
1989	1,260
1990	77
1991	719
1992	1,379
1993	470
1994	959
1995	1,556
1996	3,028
1997	1,000
1998	2,302
1999	753
2000	163
2001	1,852



Data are total escapement estimates based on live spawner counts in index areas on the lower Dosewallips River.

Dosewallips late fall chum escapements have displayed a general increase since the mid-1980s with large escapements in 1996 and 1998 of 3,028 and 2,302, respectively. Escapement was low in 2000 (163 spawners), but a number of past escapements have been of similar magnitude. Stock status is rated **Healthy** in 2002.

STOCK DEFINITION

Dosewallips late fall chum were identified as a stock based on their distinct spawning distribution and somewhat late return and spawning timing.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower mile of the Dosewallips River.

SPAWNING TIMING: Spawning generally occurs from late November through early January. Late return and spawning timing have allowed the stock to remain viable since commercial fisheries target earlier-returning Hood Canal hatchery-origin fall chum.

HOOD CANAL – DOSEWALLIPS LATE FALL CHUM

GENETIC ANALYSIS: Allozyme analysis has shown that there is considerable genetic variation within Hood Canal fall chum stocks. Pairwise comparisons of Dosewallips late fall chum with other Hood Canal fall chum stocks do not always show significant differences (Phelps 1995).

STOCK ORIGIN

This is a **native** stock with **wild** production.

HOOD CANAL – QUILCENE LATE FALL CHUM

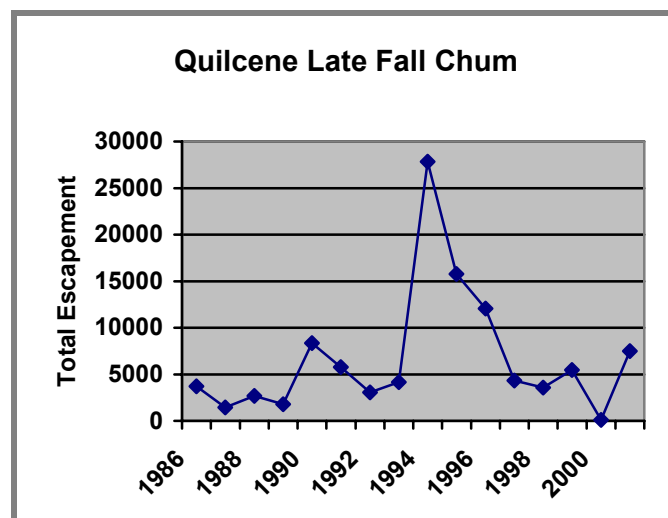
STOCK STATUS

1992 STATUS Healthy	2002 STATUS Healthy
-------------------------------	-------------------------------

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	TOTAL ESCAPEMENT
1986	3,696
1987	1,455
1988	2,682
1989	1,798
1990	8,335
1991	5,778
1992	3,056
1993	4,155
1994	27,840
1995	15,768
1996	12,061
1997	4,340
1998	3,561
1999	5,456
2000	148
2001	7,492



Data are total escapement estimates based on live spawner counts in index areas on the Big Quilcene and Little Quilcene rivers and on Spencer and Jackson creeks, two independent streams.

Quilcene late fall chum escapements increased through the 1990s. The status of the stock is Healthy since thousands of fish spawn in these streams each year.

STOCK DEFINITION

Quilcene late fall chum were identified as a stock based on their distinct spawning distribution and somewhat late return and spawning timing.

SPAWNING DISTRIBUTION: Most spawning takes place in lower two miles of the Big Quilcene and Little Quilcene rivers. Spawning also takes place in Walcott Slough and the lower reaches of Jackson and Spencer creeks.

SPAWNING TIMING: Spawning generally occurs from November through early January. Earlier spawners may be hatchery-origin fall chum from the Quilcene and Walcott National fish hatcheries. The late-spawning component has have allowed the stock to remain viable since commercial fisheries target earlier-returning Hood Canal hatchery-origin fall chum.

HOOD CANAL – QUILCENE LATE FALL CHUM

GENETIC ANALYSIS: Allozyme analysis has shown that there is considerable genetic variation within Hood Canal fall chum stocks. Pairwise comparisons of Quilcene and Walcott National Fish Hatchery fall chum with other Hood Canal stocks do not always show significant differences (Phelps et al. 1995).

STOCK ORIGIN

This is a **mixed** stock with **composite** production. Spawners include hatchery-origin chum from the Quilcene National Fish Hatchery on the Big Quilcene River.

HOOD CANAL - NORTHEAST HOOD CANAL COHO

STOCK STATUS

1992 STATUS

Depressed

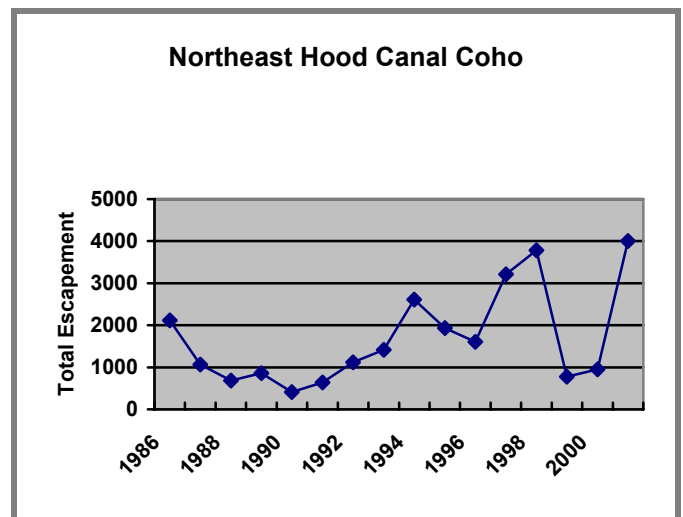
2002 STATUS

Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

BROOD YEAR	TOTAL ESCAPEMENT	SMOLT COUNTS
1986	2,118	25,948
1987	1,067	17,206
1988	684	19,303
1989	858	23,123
1990	408	18,264
1991	636	12,783
1992	1,115	18,024
1993	1,412	16,207
1994	2,611	25,250
1995	1,936	39,926
1996	1,603	21,731
1997	3,213	20,504
1998	3,779	47,089
1999	777	21,855
2000	950	
2001	~4,000	



Total escapement estimates are based on adult coho counted at the WDFW research weir at RM 0.1 on Big Beef Creek. Coho smolts are counted at a downstream trap at RM 0.1 on Big Beef Creek. Estimates of stray hatchery coho entering Big Beef Creek are available from 1991 to the present.

This stock is rated **Healthy** in 2002 because the total escapement for Big Beef Creek indicator stock has met or exceeded the maximum sustained harvest (MSH) escapement level of 1,260 adults (PNPTC et al. 1994) and smolt production has met or exceeded the long term average throughout the 1990s. Stray hatchery coho adults can comprise a substantial portion (>10%) of the total escapement in some years, however.

STOCK DEFINITION

Northeast Hood Canal coho were provisionally identified as a stock based on the proximity and similar characteristics of their spawning streams.

SPAWNING DISTRIBUTION: Spawning takes place in Big Anderson, Stavis, Seabeck, Big Beef, Little Beef, Gamble, Miller, Lake and Kinman creeks on the east side of Hood Canal, in Thorndyke and Shine creeks on the west side of Hood Canal, and in numerous smaller, independent west side drainages.

SPAWNING TIMING: Spawning generally occurs from late November to early January.

HOOD CANAL - NORTHEAST HOOD CANAL COHO

GENETIC ANALYSIS: No genetic analysis has been done on Northeast Hood Canal coho.

STOCK ORIGIN

This is a **mixed** stock with **wild** production. Six off-station fingerling/fry plants have been made into Big Beef, Seabeck or Stavis creeks utilizing Minter Creek, George Adams, Skykomish and Quilcene hatchery stocks. Releases of Quilcene, Green River, Hood Canal and Dungeness hatchery stocks were made into Shine and Throndyke creeks. Since 1981 substantial numbers of extended-reared Dungeness Hatchery or Quilcene National Fish Hatchery coho have been released annually from net pens in Port Gamble Bay and Quilcene Bay. This stock is likely a mixture of native and introduced non-native stocks.

HOOD CANAL - DEWATTO COHO

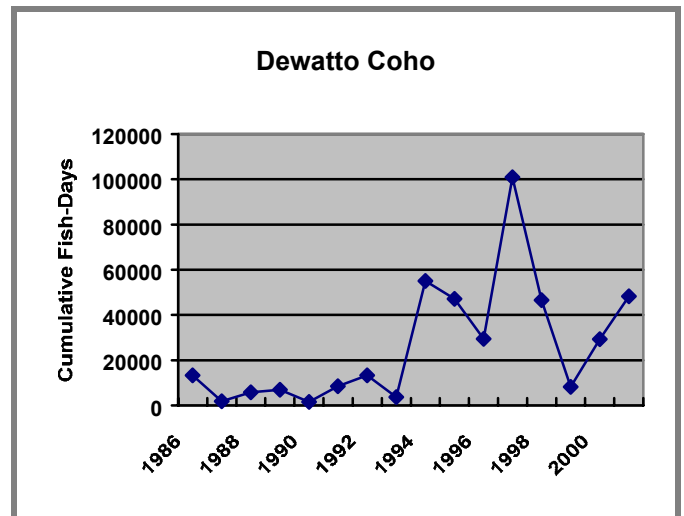
STOCK STATUS

1992 STATUS Depressed	2002 STATUS Healthy
---------------------------------	-------------------------------

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	CUMULATIVE FISH-DAYS
1986	13,285
1987	1,902
1988	5,862
1989	6,986
1990	1,605
1991	8,509
1992	13,293
1993	3,615
1994	55,073
1995	47,153
1996	29,432
1997	100,879
1998	46,539
1999	8,257
2000	29,349
2001	48,291



Data are season cumulative fish-days from live spawner counts from the Dewatto River (RM 4.8 to 7.5) and Windship Creek (RM 1.1 to 1.6). The escapement indicator values (fish-days) for 1994 to 2001 (except 1999) were 2 to 12 times higher than the mean of the 1987-1991 values. There was a marked decline from 1998 to 2000, but escapement values were still higher than any values prior to 1994. Since cumulative fish-days on the order of 30,000 to 50,000 convert to about 2,000 to 4,000 coho adults in 3.2 miles of index stream, this stock is rated **Healthy** in 2002.

STOCK DEFINITION

Dewatto coho were identified as a stock based upon their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning takes place throughout the Dewatto watershed.

SPAWNING TIMING: Spawning generally occurs from November to early January.

GENETIC ANALYSIS: Allozyme analysis of Dewatto coho sampled in 1994 to 1996 showed them to be significantly different from all other Washington coho stocks examined (David Teel, NMFS, personal communication).

HOOD CANAL - DEWATTO COHO

STOCK ORIGIN

This is a **mixed** stock with **wild** production. Releases of non-native hatchery-origin coho yearlings (George Adams, Dungeness and Minter Creek (South Sound) stocks) occurred between 1954 and 1979. There have also been releases of Minter Creek, Quilcene, Soos Creek (Green River), Skykomish, and George Adams fish. This stock is likely a mixture of the native and introduced non-native stocks.

HOOD CANAL - SOUTHEAST HOOD CANAL COHO

STOCK STATUS

1992 STATUS

Depressed

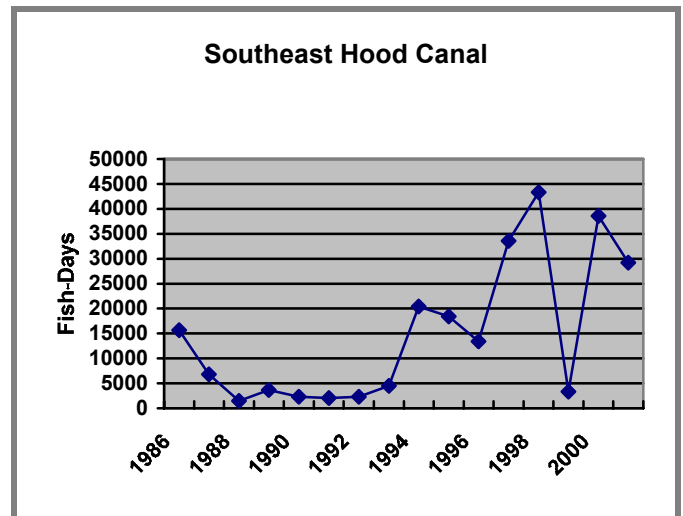
2002 STATUS

Healthy

STOCK STATUS RATING DATA

DATA QUALITY: Good

YEAR	CUMULATIVE FISH-DAYS
1986	15,646
1987	6,781
1988	1,474
1989	3,661
1990	2,299
1991	2,037
1992	2,315
1993	4,467
1994	20,388
1995	18,424
1996	13,429
1997	33,560
1998	43,315
1999	3,313
2000	38,589
2001	29,214



Data are season cumulative fish-days values for the indices on the Tahuya River (Little Tahuya River (RM 0.0 to 1.0), Andys Creek (RM 0.0 to 0.6), Erdman Lake (RM 0.0 to 1.4), Haven Lake (RM 0.0 to 1.2) and Buffoon Creek (RM 0.3 to 0.9)), in Big Mission Creek (RM 3.2 to 5.1), in Little Mission Creek (RM 0.0 to 0.8), in the Union River mainstem (RM 5.3 to 6.0), in Courney Creek (RM 0.0 and 0.8), and in Bear Creek (RM 0.3 to 0.8).

Escapements after 1993 increased dramatically (with the exception of 1999), so stock status is rated **Healthy** in 2002.

STOCK DEFINITION

Southeast Hood Canal coho were identified as a stock based on their distinct spawning distribution and the proximity and similar characteristics of their spawning streams.

SPAWNING DISTRIBUTION: Most spawning takes place in the Tahuya River, Big Mission Creek and Union River. Spawning also occurs in numerous small, independent tributaries from eastern shore of Hood Canal south of the Dewatto River and along the north and south shores of Hood Canal west of the Great Bend.

SPAWNING TIMING: Spawning generally occurs from early November to early January.

HOOD CANAL - SOUTHEAST HOOD CANAL COHO

GENETIC ANALYSIS: No genetic analysis has been done on Southeast Hood Canal coho.

STOCK ORIGIN

This is a **mixed** stock with **wild** production. There were periodic off-station releases of hatchery-origin coho yearlings into this region between 1952 and 1976. Most releases were from Minter Creek Hatchery, along with Dungeness, George Adams and Soos Creek hatchery stocks. Releases occurred mainly in the Tahuya and Union Rivers, Big Mission and Stimson Creeks and Lake Erdman. This stock is likely a mixture of the native and introduced non-native stocks.

HOOD CANAL - SKOKOMISH COHO

STOCK STATUS

1992 STATUS

Healthy

2002 STATUS

Healthy

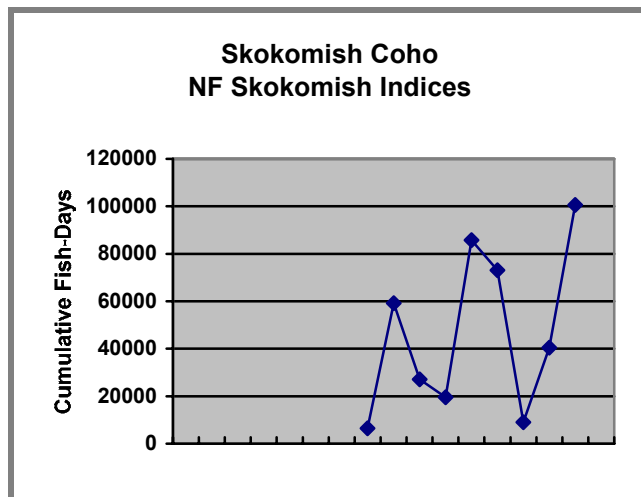
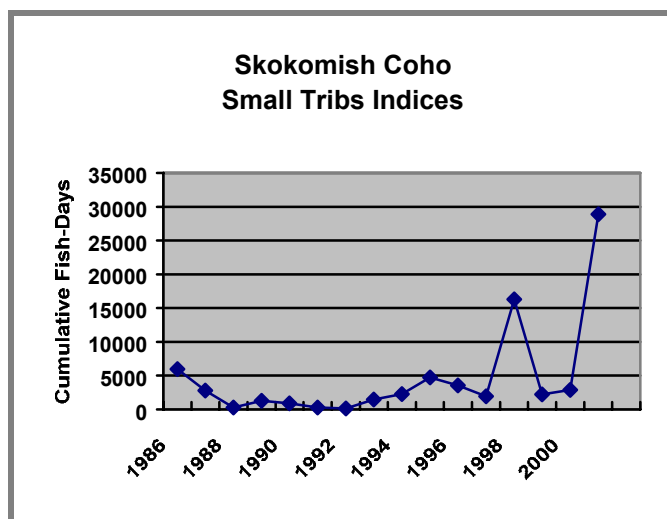
STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	CUMULATIVE FISH-DAYS	
	SMALL TRIBS	NF SKOKOMISH
1986	5,991	
1987	2,791	
1988	277	
1989	1,277	
1990	904	
1991	307	
1992	127	
1993	1,461	6,484
1994	2,263	59,244
1995	4,730	27,163
1996	3,572	19,578
1997	1,931	85,819
1998	16,274	73,065
1999	2,213	9,023
2000	2,912	40,486
2001	28,892	100,639

Data are: 1) sum-of-season cumulative fish-days values for index areas in the following small Skokomish tributaries: Swift Creek (RM 0.0 to 0.3), Kirkland Creek (RM 0.0 to 0.6), Kirkland Cr. unnamed tributary (16.0015, RM 0.0 to 0.9), and Fir Creek (RM 0.0 to 0.3) creeks; and 2) cumulative fish-days values for the North Fork Skokomish River index areas (RM 12.0 to 15.6) begun in 1993.

Spawner escapements in indices for the small tributaries have increased substantially since 1993. New escapement information from the most significant spawning tributary in the Skokomish River basin, the North Fork Skokomish, became available starting in 1993. Cumulative fish-days on the order of 20,000 to 100,000 since 1994 convert to about 2,000 to 5,000 adult coho in the 3.6 miles of the North Fork that are surveyed. Stock status is therefore rated **Healthy** in 2002.



HOOD CANAL - SKOKOMISH COHO

STOCK DEFINITION

Skokomish coho were identified as a stock based their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning takes place throughout the Skokomish system wherever accessible and suitable habitat is available. Spawning in the upper North Fork Skokomish is blocked by Tacoma City Light dams.

SPAWNING TIMING: Spawning occurs from late October to early January.

GENETIC ANALYSIS: Allozyme analysis of North Fork Skokomish coho sampled in 1994 and 1995 showed them to be significantly different from all other Washington coho (David Teel, NMFS, personal communication).

STOCK ORIGIN

This is a **mixed** stock with **wild** production. There have been substantial releases of non-native coho fry and yearlings into this system, particularly from George Adams Hatchery on Purdy Creek. There were several releases into Purdy Creek utilizing Quilcene, Samish, Soos Creek, Hood Canal and Skykomish hatchery stocks with additional use of Puyallup, Minter Creek and Sol Duc stocks. Fingerling/fry releases from 1958 to 1973 utilized primarily Hood Canal and George Adams stocks. This stock is likely a mixture of the native and introduced non-native stocks.

HOOD CANAL - SOUTHWEST HOOD CANAL COHO

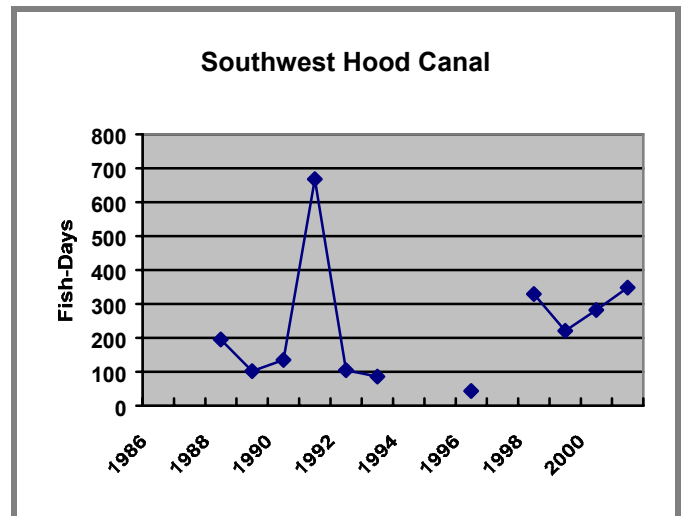
STOCK STATUS

1992 STATUS Healthy	2002 STATUS Healthy
-------------------------------	-------------------------------

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	CUMULATIVE FISH-DAYS
1986	No data
1987	No data
1988	195
1989	102
1990	135
1991	668
1992	105
1993	86
1994	No data
1995	No data
1996	43
1997	No data
1998	329
1999	221
2000	282
2001	348



Data are sum-of-season cumulative fish-days values for two indices, Eagle Creek (RM 0.0 to 1.2) and Jorsted Creek (RM 0.0 to 0.7).

Index escapement values for the 1998 to 2000 period are higher than the observed values for three of the four years from 1988 to 1991. Therefore stock status is again rated **Healthy** in 2002.

STOCK DEFINITION

Southwest Hood Canal coho were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the independent tributaries between the Skokomish River and the Hamma Hamma River, including Clark, Sund, Miller, Eagle, Jorsted and Little Lilliwaup creeks and the Lilliwaup River.

SPAWNING TIMING: Spawning generally occurs from early November to late December.

GENETIC ANALYSIS: No genetic analysis has been done on Southwest Hood Canal coho.

HOOD CANAL - SOUTHWEST HOOD CANAL COHO

STOCK ORIGIN

This is a **mixed** stock with **wild** production. There were sporadic releases of hatchery yearlings between 1954 and 1976 in this area. These releases utilized Hood Canal, Dungeness and Quilcene stocks. Other releases included Hoodsport Hatchery and George Adams Hatchery stocks. From 1982, the emphasis at Hood Canal hatcheries has been on early-run production utilizing Sol Duc, Baker (Skagit River basin) and Capilano (Canada) stocks. These on-station releases may have contributed some stray spawners to local tributaries. This stock is likely a mixture of the native and introduced non-native stocks.

HOOD CANAL - HAMMA HAMMA COHO

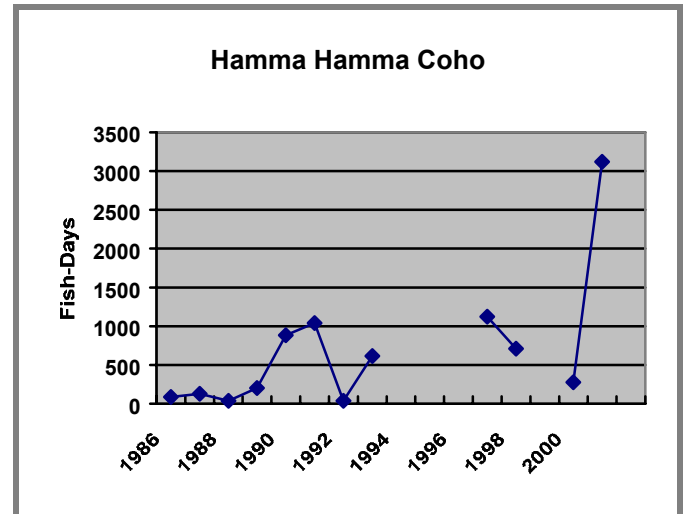
STOCK STATUS

1992 STATUS Healthy	2002 STATUS Unknown
-------------------------------	-------------------------------

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: **Poor**

YEAR	CUMULATIVE FISH-DAYS
1986	87
1987	130
1988	38
1989	202
1990	882
1991	1,042
1992	39
1993	617
1994	No data
1995	No data
1996	No data
1997	1,124
1998	710
1999	No data
2000	276
2001	3,121



Data are cumulative fish-days values for an index on John Creek (RM 0.0 to 1.6), a Hamma Hamma tributary.

Index escapement data are sporadic from 1994 to 2001. The stock is rated **Unknown** in 2002 because data for only four of the last eight years are complete.

STOCK DEFINITION

Hamma Hamma coho were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower two miles of the Hamma Hamma River and in the lower two miles of John Creek.

SPAWNING TIMING: Spawning generally occurs from early November to late December.

GENETIC ANALYSIS: No genetic analysis has been done on Hamma Hamma coho.

HOOD CANAL - HAMMA HAMMA COHO

STOCK ORIGIN

This is a **mixed** stock with **wild** production. There have been sporadic releases of non-native hatchery yearlings between 1954 and 1980 into the Hamma Hamma. These releases utilized Hood Canal, Dungeness, Quilcene, Green River, Minter and George Adam stocks. This stock is likely a mixture of the native and introduced non-native stocks.

HOOD CANAL - DUCKABUSH COHO

STOCK STATUS

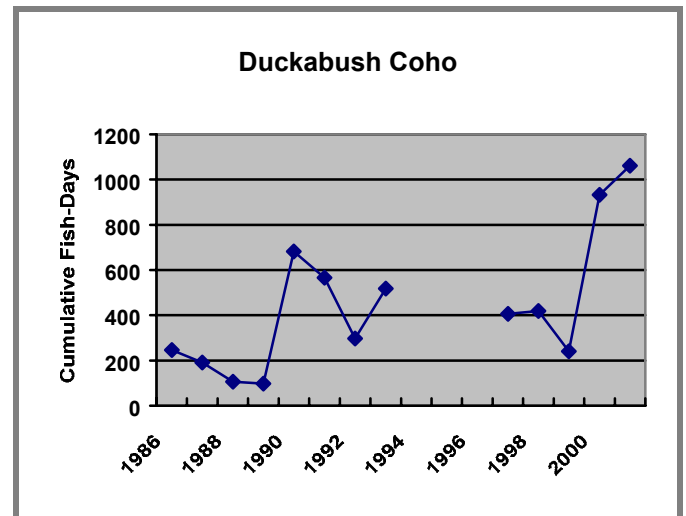
1992 STATUS
Depressed

2002 STATUS
Healthy

STOCK STATUS RATING DATA

DATA QUALITY: Good

YEAR	CUMULATIVE FISH-DAYS
1986	246
1987	191
1988	106
1989	97
1990	682
1991	566
1992	297
1993	518
1994	No data
1995	No data
1996	No data
1997	406
1998	419
1999	240
2000	933
2001	1,061



Data are sum-of-season cumulative fish-days values for Fulton (RM 0.0 to 0.8), Hatchery (16.0335, RM 0.0 to 0.1), and Pierce (16.0438, RM 0.0 to 0.5) creeks.

The 1997, 2000 and 2001 escapements were higher than the 1984 to 1989 escapement average, and the 2000 and 2001 values are the highest on record. Stock status is rated **Healthy** in 2002.

STOCK DEFINITION

Duckabush coho were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning takes place mainly in the lower three miles of the mainstem Duckabush River. Spawning also occurs in Fulton Creek to the south of the Duckabush, Pierce Creek to the north of the Duckabush and in Hatchery Creek, a lower Duckabush tributary.

SPAWNING TIMING: Spawning generally occurs from early November to early January.

GENETIC ANALYSIS: No genetic analysis has been done on Duckabush coho.

HOOD CANAL - DUCKABUSH COHO

STOCK ORIGIN

This is a **mixed** stock with **wild** production. There were infrequent off-station releases of hatchery yearlings between 1954 and 1980 into the Duckabush utilizing Hood Canal, Quilcene, Green River, Minter Creek and Dungeness hatchery stocks. George Adams fingerlings were released into this area from 1984 through 1986. This stock is probably a mixture of native and introduced non-native stocks.

HOOD CANAL - DOSEWALLIPS COHO

STOCK STATUS

1992 STATUS

Healthy

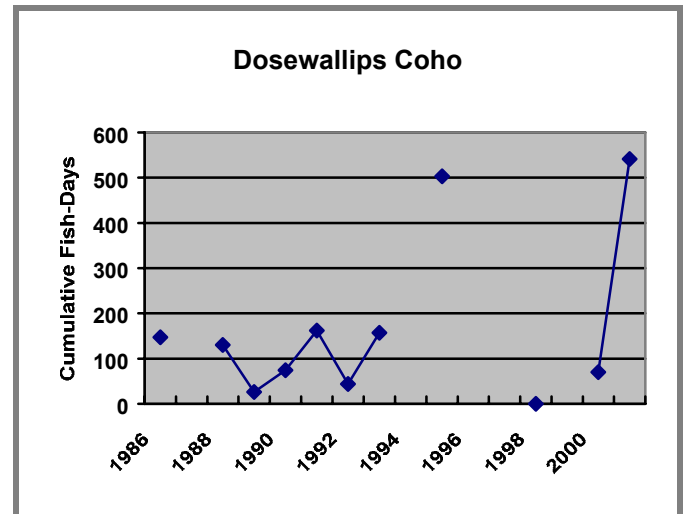
2002 STATUS

Unknown

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Poor

YEAR	CUMULATIVE FISH-DAYS
1986	137
1987	No data
1988	130
1989	26
1990	74
1991	162
1992	44
1993	157
1994	No data
1995	503
1996	No data
1997	No data
1998	0
1999	No data
2000	70
2001	541



Data are sum-of-season cumulative fish-days values for index areas on Rockybrook Creek (RM 0.0 to 0.3), a Dosewallips tributary.

Given that the Rockybrook Creek index represents only a small part of the basin and is poor-quality spawning habitat, these data are not considered a good representation of the total population. Consequently, stock status is rated **Unknown** in 2002.

STOCK DEFINITION

Dosewallips coho were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower 12 miles of the mainstem Dosewallips and in side channels and small tributaries.

SPAWNING TIMING: Spawning generally occurs from early November to late December.

GENETIC ANALYSIS: No genetic analysis has been done on Dosewallips coho.

HOOD CANAL - DOSEWALLIPS COHO

STOCK ORIGIN

This is a **mixed** stock with **wild** production. There were periodic releases of non-native yearlings between 1954 and 1980 utilizing Dungeness, Hood Canal, George Adams, Quilcene, Minter Creek and Green River hatchery stocks. George Adams fingerlings were released into this area in 1985 and 1986. This stock is probably a mixture of the native and introduced non-native stocks.

HOOD CANAL - QUILCENE/DABOB BAY COHO

STOCK STATUS

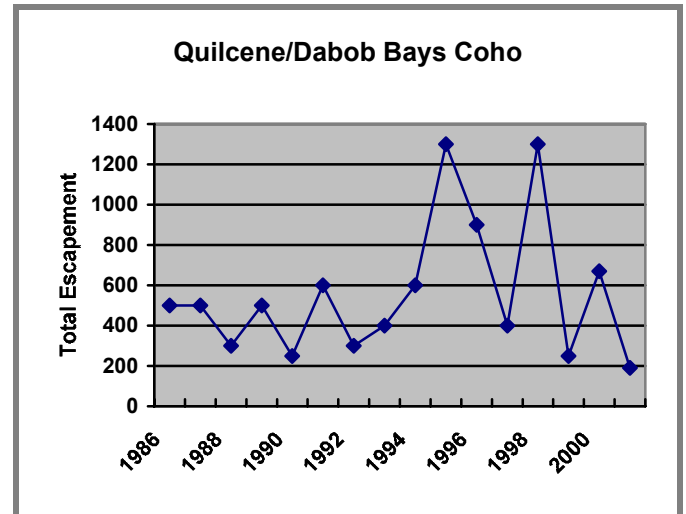
1992 STATUS
Depressed

2002 STATUS
Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	450
1987	420
1988	270
1989	450
1990	230
1991	560
1992	260
1993	370
1994	540
1995	1,180
1996	870
1997	400
1998	1,019
1999	179
2000	477
2001	135



Data are estimates of total escapement to the tributaries to Quilcene and Dabob bays based on redd count data for Little Quilcene River (RM 3.0 to 5.3) and Tarboo Creek (RM 0.0 to 0.9) survey indices.

Although there are several escapement values in the 1992 and 2000 time period that were two to three times higher than the 1986 to 1992 average, the 1999 and 2000 values were similar in magnitude to the range of values for 1986 to 1991, and the 2001 escapement is among the lowest on record. Stock status is rated **Depressed** in 2002 because of **chronically low** escapements.

STOCK DEFINITION

Quilcene/Dabob Bays coho were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower Big Quilcene and Little Quilcene rivers, and in lower Spencer, Jackson, Donovan and Tarboo creeks.

SPAWNING TIMING: Spawning generally occurs from early November to mid-January, although timing is variable among years.

HOOD CANAL - QUILCENE/DABOB BAY COHO

GENETIC ANALYSIS: Allozyme analysis of a sample of Quilcene Hatchery coho collected in 1994 showed that it differed significantly from all other coho sampled in Washington (David Teel, NMFS, personal communication).

STOCK ORIGIN

This is a **mixed** stock with **composite** production. There have been frequent introductions of non-native coho, mainly into Tarboo Creek and Little Quilcene River. Introduced stocks included Quilcene, Soos Creek (Green River), Hoodspout and Dungeness hatchery stocks. There were sporadic fingerling/fry releases between 1954 and 1963 utilizing a variety of Puget Sound stocks. Beginning in 1986, extended-reared hatchery-origin coho have been released from net pens in Quilcene Bay. This stock is likely a mixture of native stock and introduced non-native stocks.

HOOD CANAL – HAMMA HAMMA PINK

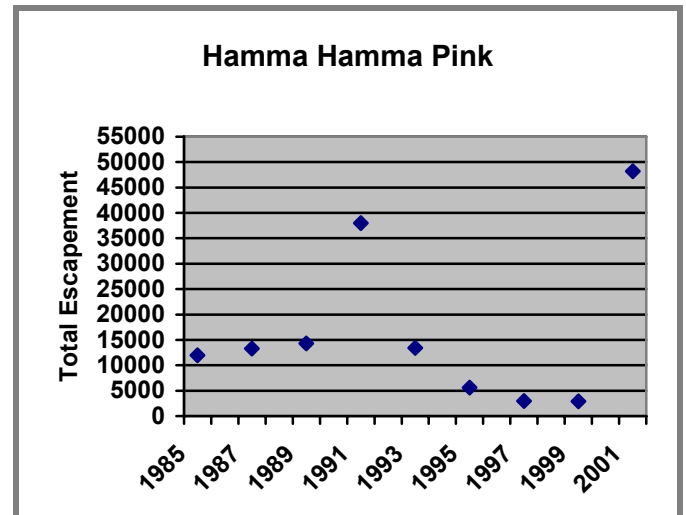
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: **Good**

YEAR	TOTAL ESCAPEMENT
1985	12,000
1986	
1987	13,300
1988	
1989	14,300
1990	
1991	38,000
1992	
1993	13,432
1994	
1995	5,593
1996	
1997	2,969
1998	
1999	2,903
2000	
2001	48,200



Data are total escapements based on counts of live and dead spawners from RM 0.3 to 1.8 in the mainstem Hamma Hamma and from RM 0.0 to 1.0 in John Creek, a Hamma Hamma tributary.

Hamma Hamma pink escapements have been strong since 1983 with very large escapements in 1991 and 2001. The escapements for 1995, 1997, and 1999 are considerably lower but are still within the normal range of variation for the stock. Stock status is rated **Healthy** in 2002, however any further decline will result in a lower status rating.

STOCK DEFINITION

Hamma Hamma pinks were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower two miles of the mainstem Hamma Hamma River and in John Creek.

SPAWNING TIMING: Spawning generally occurs from September through early October.

HOOD CANAL – HAMMA HAMMA PINK

GENETIC ANALYSIS: Allozyme analysis has shown that Hamma Hamma pinks are not genetically distinct from the Duckabush and Dosewallips pink stocks but are significantly different from pinks stocks beyond Hood Canal (Shaklee 2001). Separate stock status is based on the geographic distance among the stocks and the likely degree of reproductive isolation.

STOCK ORIGIN

This is a **native** stock with **wild** production.

HOOD CANAL – DUCKABUSH PINK

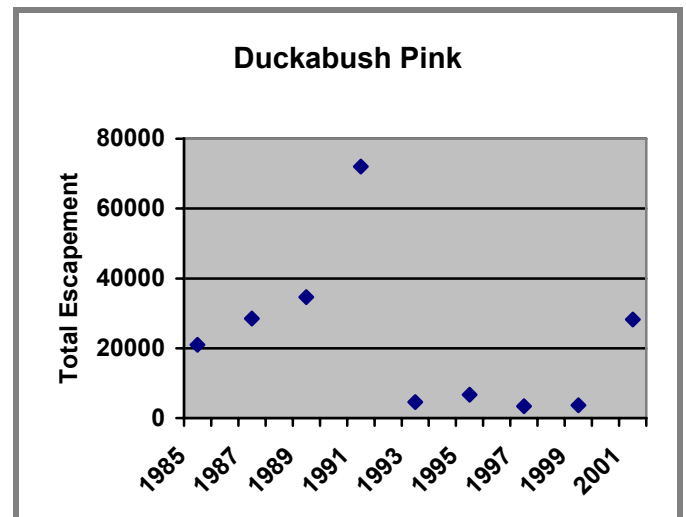
STOCK STATUS

1992 STATUS Healthy	2002 STATUS Depressed
-------------------------------	---------------------------------

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	TOTAL ESCAPEMENT
1985	21,000
1986	
1987	28,500
1988	
1989	34,600
1990	
1991	72,000
1992	
1993	4,578
1994	
1995	6,659
1996	
1997	3,376
1998	
1999	3,669
2000	
2001	28,200



Data are total escapement estimates based on counts of live and dead spawners from RM 0.1 to 2.3 on the mainstem Duckabush.

Duckabush pink escapements exceeded 20,000 spawners each year between 1985 and 1991, peaking with 72,000 fish in 1991. Although estimated escapement increased to 28,200 in 2001, stock status is rated **Depressed** in 2002 due to **chronically low** escapements from 1993 through 1999.

STOCK DEFINITION

Duckabush pinks were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the mainstem lower two miles of the Duckabush River.

SPAWNING TIMING: Spawning occurs from September through early October.

GENETIC ANALYSIS: Allozyme analysis has shown that Duckabush pinks are not genetically distinct from the Hamma Hamma and Dosewallips pink stocks but are significantly different from other Washington

HOOD CANAL – DUCKABUSH PINK

pink stocks (Shaklee 2001). Separate stock status is based on the geographic distance among the stocks and the likely degree of reproductive isolation.

STOCK ORIGIN

This is a **native** stock with **wild** production.

HOOD CANAL – DOSEWALLIPS PINK

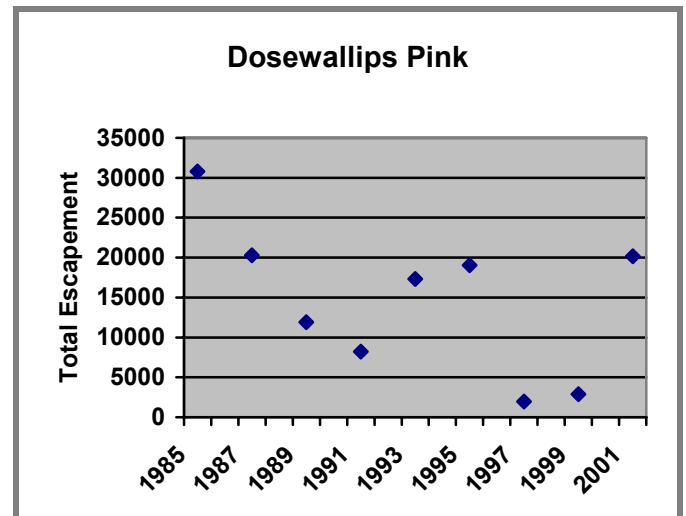
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1985	30,800
1986	
1987	20,300
1988	
1989	11,900
1990	
1991	8,200
1992	
1993	17,316
1994	
1995	19,034
1996	
1997	1,954
1998	
1999	2,903
2000	
2001	20,175



Data are total escapement estimates based on counts of live and dead spawners from RM 0.0 to 6.7 in the mainstem Dosewallips River.

Dosewallips pink escapements were very large in the three return years from 1963 to 1967 (from 125,000 to 400,000 spawners). More typical escapements were in the range of 10,000 to 40,000 spawners. The 1997 and 1999 escapements were well below this range (1,954 and 2,903 respectively). Although escapement increased to 20,175 in 2001, stock status is **Depressed** in 2002 due to **chronically low** escapements and a **short-term severe decline** in 1997 and 1999.

STOCK DEFINITION

Dosewallips pinks were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower seven miles of the mainstem Dosewallips River.

SPAWNING TIMING: Spawning occurs from September through early October.

HOOD CANAL – DOSEWALLIPS PINK

GENETIC ANALYSIS: Allozyme analysis has shown that Dosewallips pinks are not genetically distinct from the Hamma Hamma and Duckabush pink stocks but are significantly different from other Washington pink stocks (Shaklee 2001). Separate stock status is based on the geographic distance among the stocks and the likely degree of reproductive isolation.

STOCK ORIGIN

This is a **native** stock with **wild** production.

HOOD CANAL – SKOKOMISH SUMMER STEELHEAD

STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Unknown

STOCK STATUS RATING DATA

There are no adequate abundance trend data for Skokomish summer steelhead, so their status remains **Unknown** in 2002. Escapement is not monitored nor has an escapement goal been developed.

STOCK DEFINITION

Skokomish summer steelhead were identified as a stock based on their distinct spawner distribution and early run and spawning timing.

SPAWNING DISTRIBUTION: Specific spawning locations are unknown, but we believe that spawning takes place in the upper reaches of the Skokomish River.

SPAWNING TIMING: Spawning timing is unknown but is thought to be from February through April.

GENETIC ANALYSIS: No genetic analysis has been done on Skokomish summer steelhead.

STOCK ORIGIN

Stock origin and production type are **unresolved** by the state and tribes.

HOOD CANAL – DUCKABUSH SUMMER STEELHEAD

STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Unknown

STOCK STATUS RATING DATA

There are no adequate abundance trend data for Duckabush summer steelhead, so their status remains **Unknown** in 2002. Escapement is not monitored nor has an escapement goal been developed.

STOCK DEFINITION

Duckabush summer steelhead were identified as a stock based on their distinct spawner distribution and early run and spawning timing.

SPAWNING DISTRIBUTION: Specific spawning locations are unknown, but we believe that spawning takes place in the upper reaches of the Duckabush River.

SPAWNING TIMING: Spawning timing is unknown but is thought to be from February through April.

GENETIC ANALYSIS: No genetic analysis has been done on Duckabush summer steelhead.

STOCK ORIGIN

Stock origin and production type are **unresolved** by the state and tribes.

HOOD CANAL – DOSEWALLIPS SUMMER STEELHEAD

STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Unknown

STOCK STATUS RATING DATA

There are no adequate abundance trend data for Dosewallips summer steelhead, so their status remains **Unknown** in 2002. Escapement is not monitored nor has an escapement goal been identified.

STOCK DEFINITION

Dosewallips summer steelhead were identified as a stock based on their distinct spawner distribution.

SPAWNING DISTRIBUTION: Specific spawning locations are unknown but we believe that spawning takes place in the upper reaches of the Dosewallips River.

SPAWNING TIMING: Spawning timing is unknown but is thought to be from February through April.

GENETIC ANALYSIS: No genetic analysis has been done on Dosewallips summer steelhead.

STOCK ORIGIN

Stock origin and production type are **unresolved** by the state and tribes.

HOOD CANAL – DEWATTO WINTER STEELHEAD

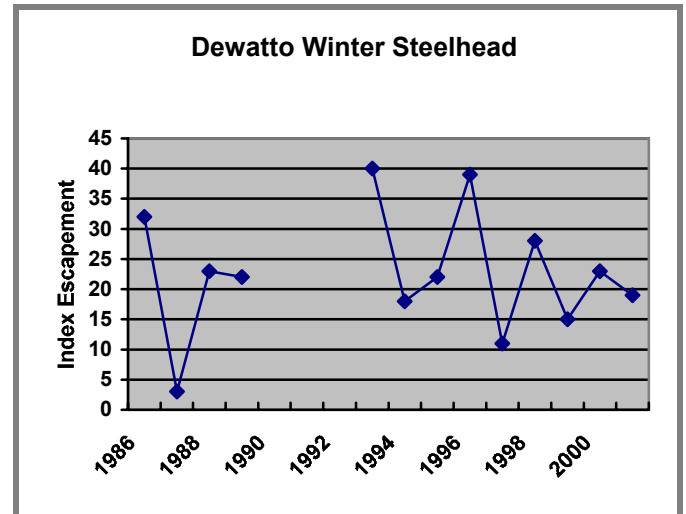
STOCK STATUS

1992 STATUS Depressed	2002 STATUS Depressed
---------------------------------	---------------------------------

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	INDEX ESCAPEMENT
1986	32
1987	3
1988	23
1989	22
1990	No data
1991	No data
1992	No data
1993	40
1994	18
1995	22
1996	39
1997	11
1998	28
1999	15
2000	23
2001	19



Data are index escapement estimates based on redd counts from RM 0.0 to 3.75.

Stock status is rated **Depressed** in 2002 based on **chronically low** escapements. In all years surveyed, escapements have been lower than expected based on available habitat. Using WDFW methodology (Gibbons et al. 1985), the escapement goal would be 138 wild adults in the index area. However, the state and Treaty Tribes have not agreed to the goal or the method used to derive it.

STOCK DEFINITION

Dewatto winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower four miles of the Dewatto River.

SPAWNING TIMING: Spawning generally occurs from mid-February to early June.

GENETIC ANALYSIS: No genetic analysis has been done on Dewatto winter steelhead.

HOOD CANAL – DEWATTO WINTER STEELHEAD

STOCK ORIGIN

Stock origin and production type are **unresolved** by the state and tribes.

HOOD CANAL – TAHUYA WINTER STEELHEAD

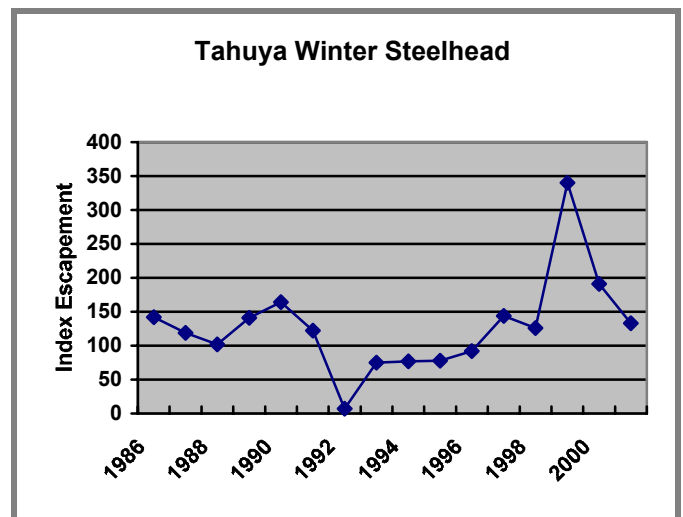
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	INDEX ESCAPEMENT
1986	142
1987	119
1988	102
1989	141
1990	164
1991	122
1992	73
1993	75
1994	77
1995	78
1996	92
1997	144
1998	126
1999	340
2000	191
2001	133



Data are index escapement estimates based on redd counts from RM 1.0 to 11.0. Stock status is rated **Depressed** in 2002 based on **chronically low** escapements.

Spawner escapement has ranged from 73 to 340 wild winter steelhead in Tahuya River index areas. In all but one year (1999), escapements have been lower than expected based on available habitat. Using WDFW methodology (Gibbons et al. 1985), the escapement goal would be 236 wild adults in the index areas. However, the state and Treaty Tribes have not agreed to the objective or the method used to derive it.

STOCK DEFINITION

Tahuya winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower 11 miles of the Tahuya River and in some tributaries.

SPAWNING TIMING: Spawning generally occurs from early March to early June.

GENETIC ANALYSIS: Allozyme analysis has shown that the Tahuya winter steelhead stock appears to be distinct from other Hood Canal steelhead stocks (Phelps et al. 1997).

HOOD CANAL – TAHUYA WINTER STEELHEAD

STOCK ORIGIN

Stock origin and production type are **unresolved** by the state and tribes.

HOOD CANAL – UNION WINTER STEELHEAD

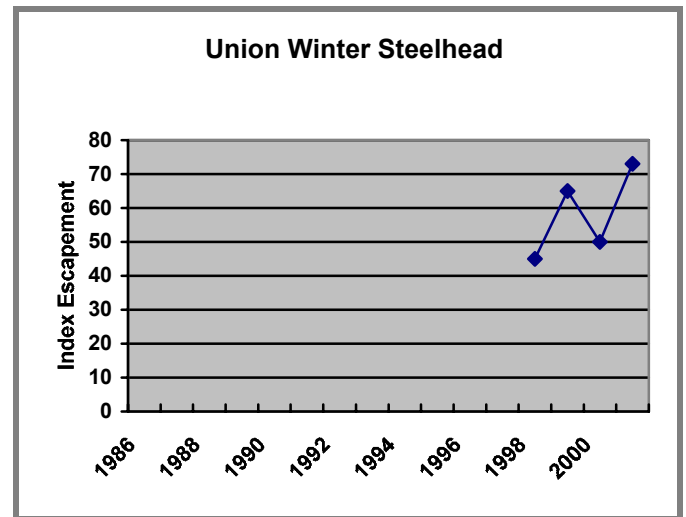
STOCK STATUS

1992 STATUS Unknown	2002 STATUS Unknown
-------------------------------	-------------------------------

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Poor

YEAR	INDEX ESCAPEMENT
1998	45
1999	65
2000	50
2001	73



Data are index escapement estimates based on redd counts from RM 0.3 to 4.0.

The quantity of data is insufficient to rate the status of this stock, and no escapement goal has been developed for this stock, so status in 2002 continues to be **Unknown**.

STOCK DEFINITION

Union winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place from RM 0.3 to 6.0 in the Union River.

SPAWNING TIMING: Spawning generally occurs from mid-February to early June.

GENETIC ANALYSIS: No genetic analysis has been done on Union winter steelhead.

STOCK ORIGIN

Stock origin and production type are **unresolved** by the state and tribes.

HOOD CANAL – SKOKOMISH WINTER STEELHEAD

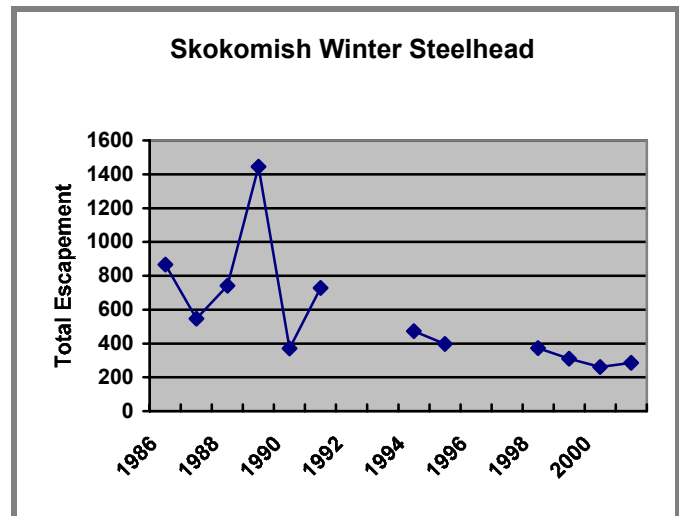
STOCK STATUS

1992 STATUS Depressed	2002 STATUS Depressed
---------------------------------	---------------------------------

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	TOTAL ESCAPEMENT
1986	866
1987	546
1988	742
1989	1,444
1990	370
1991	729
1992	No data
1993	No data
1994	473
1995	398
1996	No data
1997	No data
1998	373
1999	311
2000	261
2001	286



Data are total escapement estimates based on redd counts in index areas on the mainstem Skokomish (RM 0.0 to 9.0), in the North Fork Skokomish (RM 9.0 to RM 13.0) and in the South Fork Skokomish (RM 0.0 to 21.4).

Stock status is rated **Depressed** in 2002 based on **chronically low** escapements and a **long-term negative trend** in escapement. In all years but one (1989), escapements have been lower than expected based on available habitat. Using WDFW methodology (Gibbons et al. 1985) the escapement goal would be 1400 wild adults in index areas. However the state and Treaty Tribes have not agreed to the goal or the method used to derive it.

STOCK DEFINITION

Skokomish winter steelhead were identified as a separate stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the mainstem Skokomish and South Fork Skokomish rivers.

SPAWNING TIMING: Spawning generally occurs from mid-February to mid-June.

HOOD CANAL – SKOKOMISH WINTER STEELHEAD

GENETIC ANALYSIS: Allozyme analysis has shown that the Skokomish winter steelhead stock appears to be distinct from other Hood Canal steelhead stocks (Phelps et al. 1997).

STOCK ORIGIN

Stock origin and production type are **unresolved** by the state and tribes.

HOOD CANAL – HAMMA HAMMA WINTER STEELHEAD

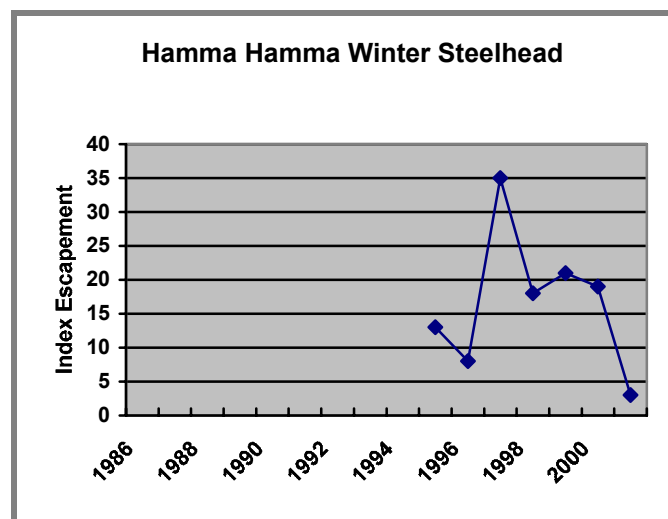
STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	INDEX ESCAPEMENT
1995	13
1996	8
1997	35
1998	18
1999	21
2000	19
2001	3



Data are index escapement estimates based on redd counts from RM 0.3 to 1.8.

Stock status is rated **Depressed** in 2002 based on **chronically low** escapements. In all years surveyed, escapement has been lower than expected based on available habitat. Using WDFW methodology (Gibbons et al. 1985) the escapement goal would be 91 wild adults in index areas. However the state and Treaty Tribes have not agreed to the goal or the method used to derive it.

In 1998 a steelhead supplementation program was initiated in the Hamma Hamma River in cooperation with the Hood Canal Salmon Enhancement Group and Long Live the Kings. The program goal is to rebuild the native population through use of conservation hatchery protocols. A research program led by NMFS has been designed to evaluate the demographic and genetic effects of the supplementation program. Initial results are encouraging as the program contributed significantly to the 230 winter steelhead that spawned in the Hamma Hamma and John Creek (a lower Hamma Hamma tributary) in 2002.

STOCK DEFINITION

Hamma Hamma winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower two miles of the Hamma Hamma River.

SPAWNING TIMING: Spawning generally occurs from mid-February to mid-June.

HOOD CANAL – HAMMA HAMMA WINTER STEELHEAD

GENETIC ANALYSIS: Allozyme and DNA analyses have been done on Hamma Hamma winter steelhead, but no comparisons with other Hood Canal steelhead have been made. The analyses have shown significant differences between resident rainbow parr and anadromous parr, which both reside in the Hamma Hamma (Berejikian et al. 2002)

STOCK ORIGIN

This is a **native** stock with **wild** production.

HOOD CANAL – DUCKABUSH WINTER STEELHEAD

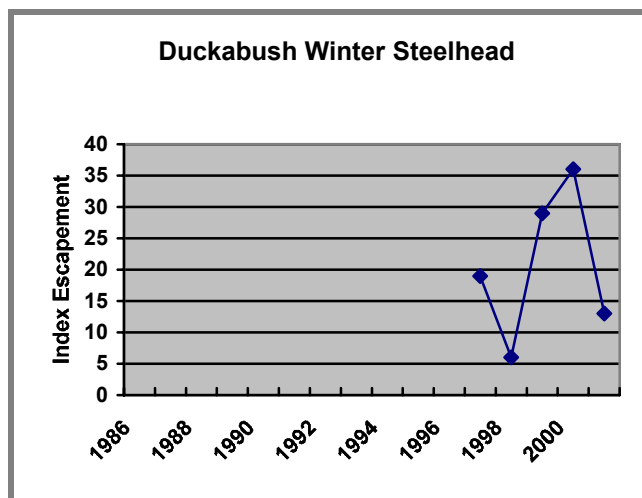
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	INDEX ESCAPEMENT
1997	19
1998	6
1999	29
2000	36
2001	13



Data are index escapement estimates based on redd counts from RM 0.0 to 2.6.

Stock status is rated **Depressed** in 2002 based on **chronically low** escapements. In all years surveyed, escapement has been lower than expected based on available habitat. Using WDFW methodology (Gibbons et al. 1985) the escapement goal would be 44 wild adults in index areas. However the state and Treaty Tribes have not agreed to the goal or the method used to derive it.

STOCK DEFINITION

Duckabush winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower four miles of the Duckabush River.

SPAWNING TIMING: Spawning generally occurs from mid-February to mid-June.

GENETIC ANALYSIS: No genetic analysis has been done on Duckabush winter steelhead.

STOCK ORIGIN

Stock origin and production type are **unresolved** by the state and tribes.

HOOD CANAL – DOSEWALLIPS WINTER STEELHEAD

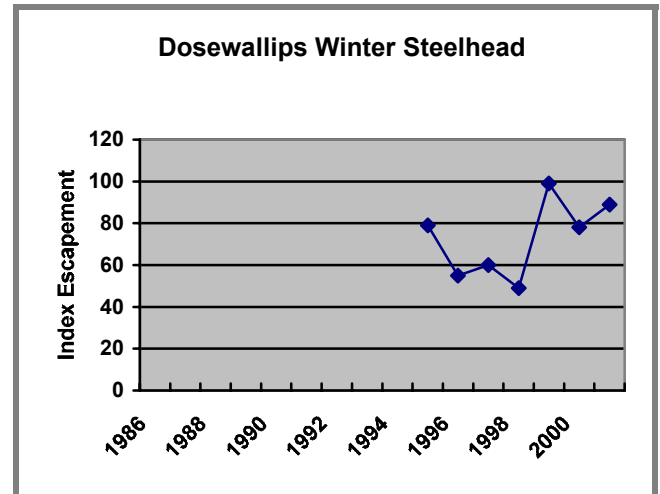
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	INDEX ESCAPEMENT
1995	79
1996	55
1997	60
1998	49
1999	99
2000	78
2001	89



Data are index escapement estimates based on redd counts from RM 0.2 to 12.0.

Stock status is rated **Depressed** in 2002 based on **chronically low** escapements. In all years surveyed, escapement has been lower than expected based on available habitat. Using WDFW methodology (Gibbons et al. 1985) the escapement goal would be 318 wild steelhead in index areas. However the state and Treaty Tribes have not agreed to the goal or the method used to derive it.

STOCK DEFINITION

Dosewallips winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower 12 miles of the Dosewallips River

SPAWNING TIMING: Spawning generally occurs from mid-February to mid-June.

GENETIC ANALYSIS: Allozyme analysis has shown that Dosewallips steelhead appear to be distinct from other Hood Canal steelhead stocks (Phelps et al. 1997).

STOCK ORIGIN

Stock origin and production type are **unresolved** by the state and tribes.

HOOD CANAL – QUILCENE/DABOB BAYS WINTER STEELHEAD

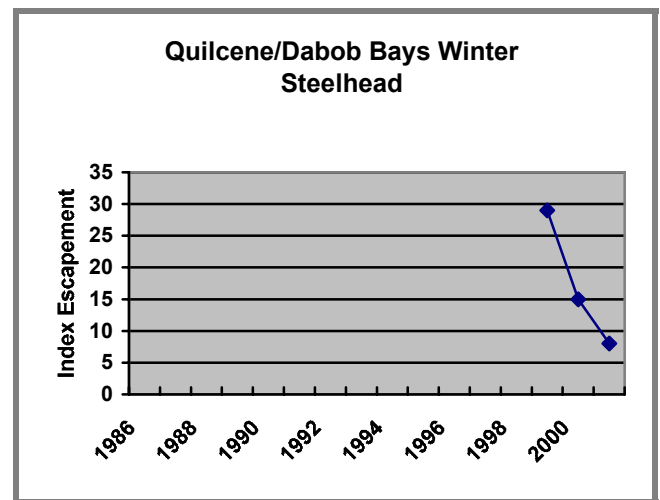
STOCK STATUS

1992 STATUS Unknown	2002 STATUS Unknown
-------------------------------	-------------------------------

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Insufficient

DATE	INDEX ESCAPEMENT
1999	29
2000	15
2001	8



Data are index escapement estimates based on redd counts from RM 0.2 to 5.3 on the Little Quilcene River.

Data quantity is insufficient to rate stock status and no escapement goal has been developed for this stock, so status is rated **Unknown** in 2002.

STOCK DEFINITION

Quilcene/Dabob Bays winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in Big Quilcene and Little Quilcene rivers and Tarboo Creek.

SPAWNING TIMING: Spawning generally occurs from mid-February to mid-June.

GENETIC ANALYSIS: No genetic analysis has been done on Quilcene/Dabob Bays winter steelhead.

STOCK ORIGIN

Stock origin and production type are **unresolved** by the state and tribes.